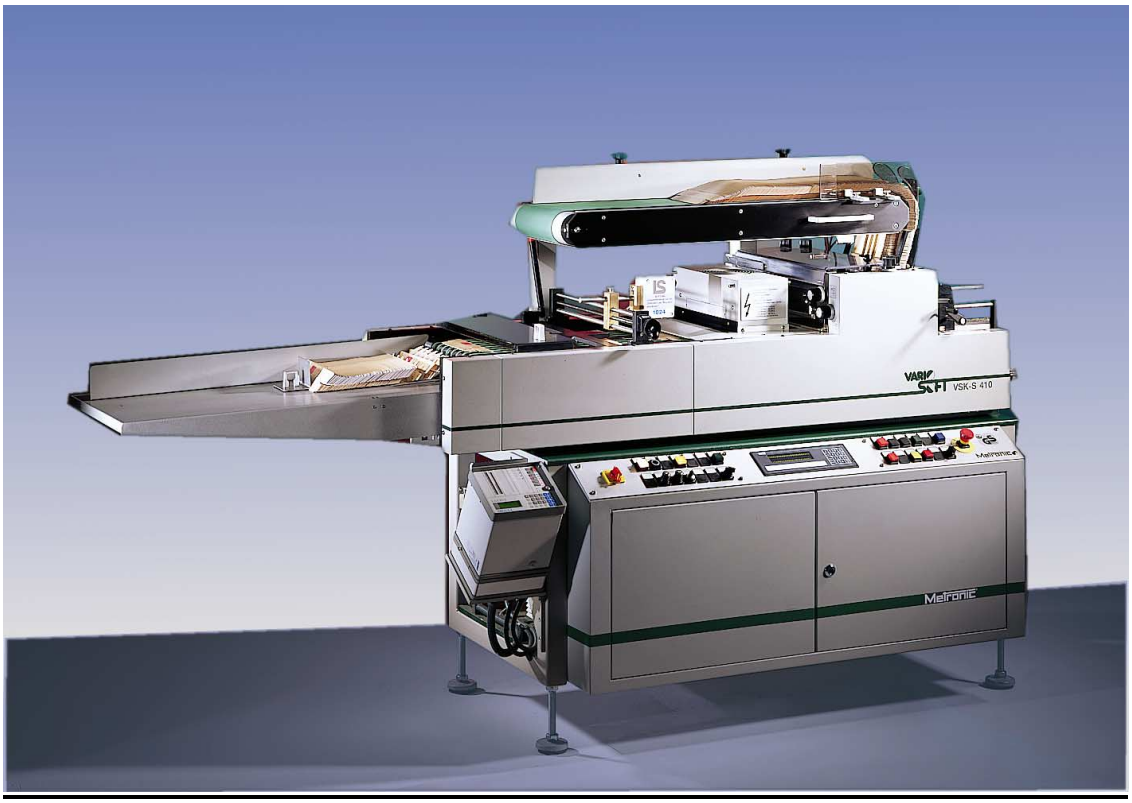
OPERATING MANUAL

vskPRINT 400 MV30107601

Customer: CUTRIN



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EC-Declaration of conformity

in accordance with EC directive relating to machinery

The manufacturer

Metronic Aktiengesellschaft
Benzstraße 11
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herewith declares, that the machine ***vskPRINT 400*** **MV30107601**, described below, corresponds to the following EC directives:

Directive relating to machinery 98/37/EG

Low voltage directive 73/23 EEC

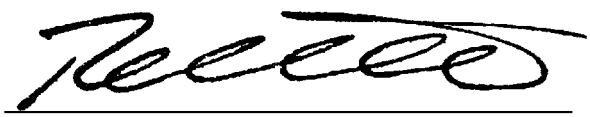
EMC directive 89/336 EEC (Electromagnetic compatibility)

Applied standards and technical specifications:

EN 292-1, EN 292-2 Safety of machinery
EN 60204-1 Electrical equipment of machines
EN 50081-2 EMC-Generic emission standard (light industry)
EN 50082-2 EMC-Generic immunity standard (light industry)

Veitshöchheim, 02/2002

T. L. Rohloff
Chairman of the board



Preface

Your vskPRINT 400/410 is based on up-to-date technology. It has been manufactured from high quality materials and been subjected to strict quality controls. We also guarantee the proper workmanship and operation of all METRONIC-accessories.

Nevertheless, you should read these Operating Instructions **carefully.** They contain all essential information, and it is absolutely necessary that you read the instructions on **technical safety.**

Warranty

The vskPRINT 400/410 has been carefully made of high-quality components and has been subjected to a stringent quality assurance procedure. That is the reason why METRONIC warrants the machine and its accessories, if it has been purchased directly from METRONIC or via one of our marketing organisations.

Unless other special conditions have been agreed upon, the warranty period covers six months (single-shift operation), beginning with the delivery ex works. If the machine is used in multiple-shift operation, the warranty period is reduced according to the number of shifts.

Operating Materials

Only original METRONIC spare parts may be used. Should foreign parts be used, any indirect damage will not be covered by the warranty obligations. An original METRONIC spare parts set is available for each model range against separate payment.

Notes on the Operating Instructions

The machine is subject to design modifications serving technical progress. The copyright to this manual is owned by METRONIC. Reproduction of this manual or transfer thereof to third parties is inadmissible or requires our prior approval.

Customer Service

Please contact our customer service in case of malfunctions which you cannot eliminate yourself:

Tel.: +49 (0) 931/9085-0
Fax.: +49 (0) 931/9085-100

Our mechanics are available at any time by telephone on working days between 8.15 - 12 a.m. and 12.45 - 15.15 p.m., Friday 8 - 12.30 a.m..
Spare parts will be sent on the same day according to your instructions, if your order reaches us before 10.00 a.m..

Please always quote the serial number of your machine (Ident No.) and, if known, the spare part number in your order.

Metronic®
Aktiengesellschaft D-97209 Veitshöchheim / Germany

Ident Nr.	
Lfd. Nr.	Bj.

CONTENT

1 Description of the Machine

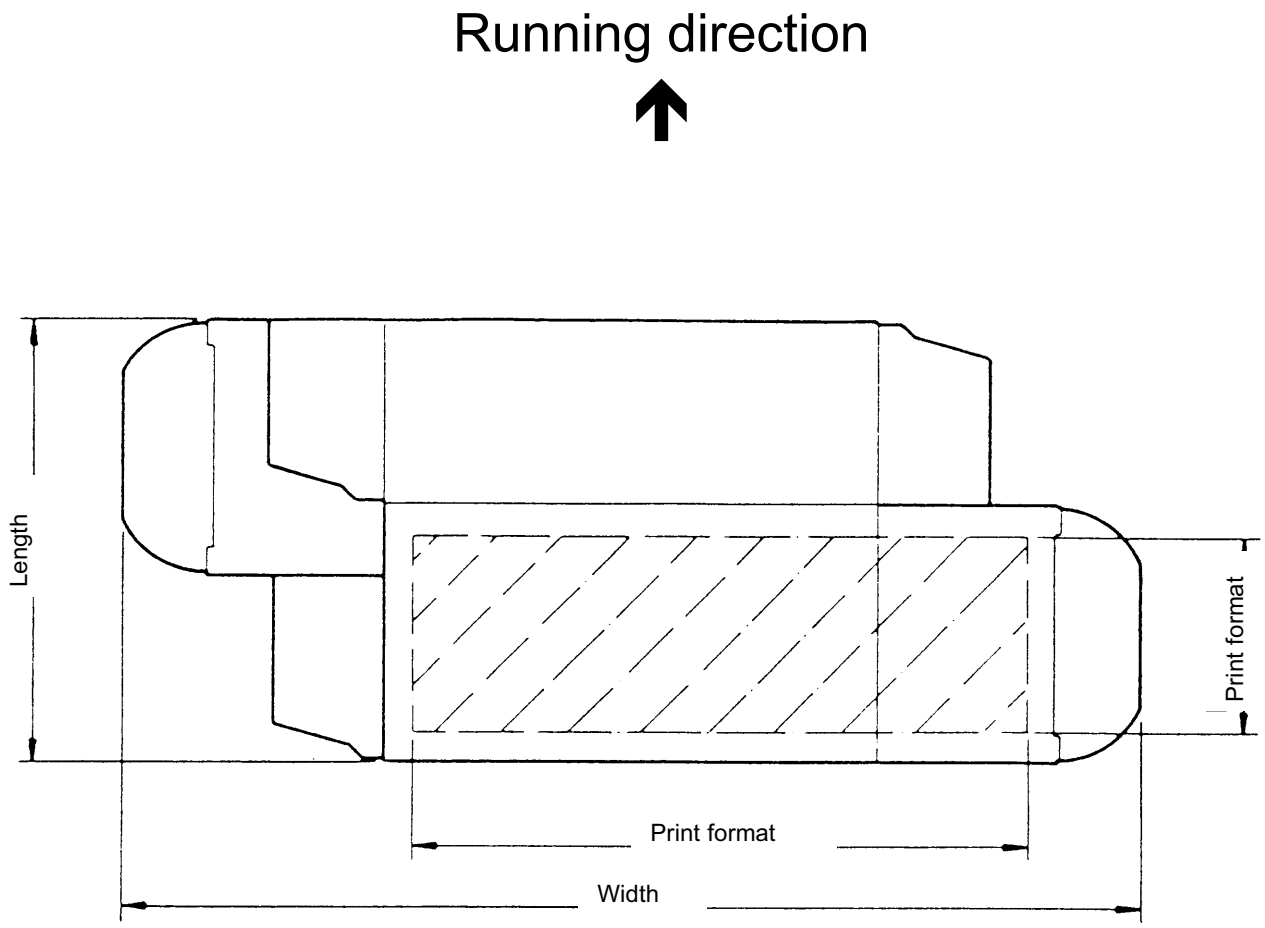
The vskPRINT 400/410 is a fully automatic overprint printer for the printing of variable data, e.g. legal or proprietary specifications, price and/or contens, etc. on folding boxes, blister box blanks or bags and stock blanks with a comparable surface.

1.1 Print Colours

Indirect letterpress process, using a special UV ink which dries under UV light, thus guaranteeing for constant optimal ink transfer and consequently needly shaft impressions.

The to be printed material blanks piled on the feeding table are passed singularly through the printing unit; are printed, dried and stacked on the receiving table thus allowing the removal of the finished product during the printing process.

1.2 Carton Size Scheme



Material Dimensions: (special dimensions upon request)	Width min. 70 mm; max. 340 mm
	Length (vskPrint 400): min. 50 mm; max. 170 mm
	Length (vskPrint 410): min. 50 mm; max. 150 mm
	Thickness min. 0,3 up to max. 2,5 mm
Print Formats: (special dimensions upon request)	With standard half-saddle: 80 x 200 mm (2000 W UV-dryer)
	With three-quarter-saddle: 130 x 200 mm (2000 W UV-dryer)

1.3 Adjustment Data

Product folding box: _____

Part of a cheapen hospital package: _____

Folding box-dimension: L = B =

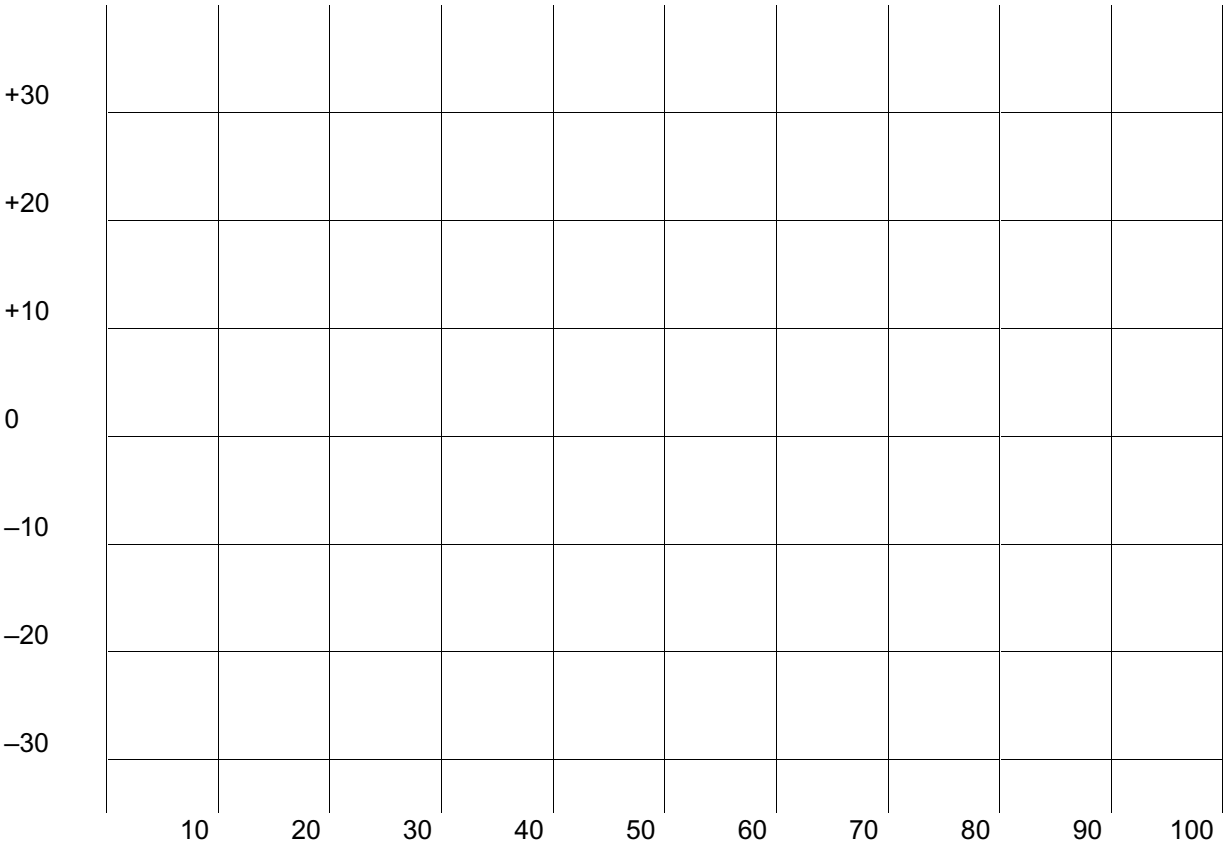
Format slide: _____

Position feeding rake: **1 2 3 4 5 6 7 8 9 10**

Position: ☐ ☐

Folding box: ☐ ☐

Half Saddle:



Product folding box: _____

Text: _____

Folding box dimension: L = B =

Format slide:

Position feeding rake: **3 4 5 6 7 8 9 10**

Position

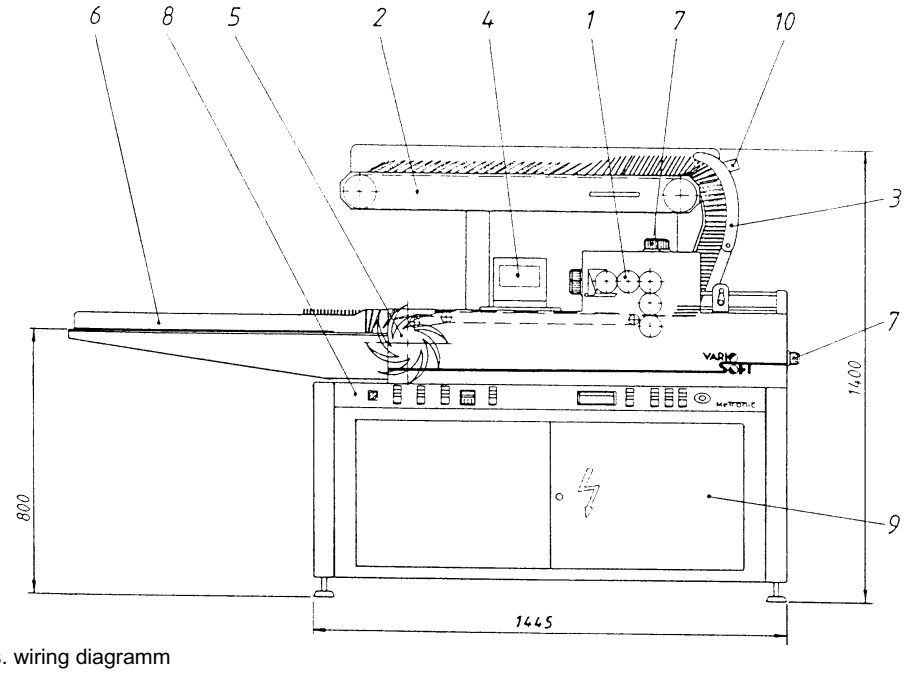
Folding box:

Half saddle:

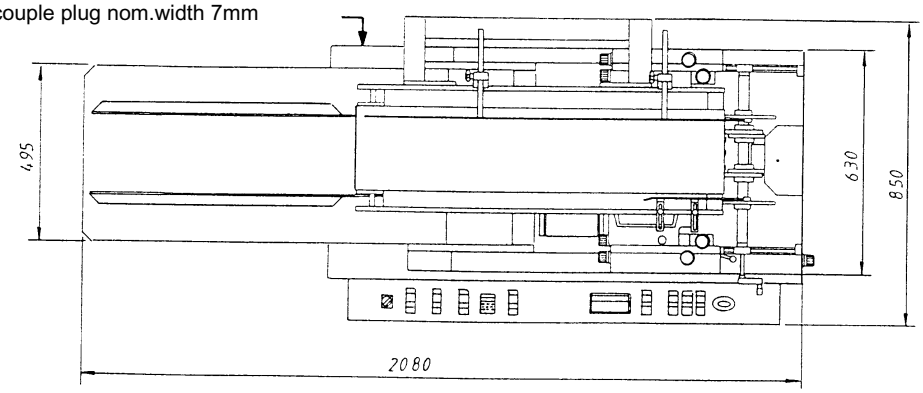
+30																				
+20																				
+10																				
0																				
–10																				
–20																				
–30																				
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200

2 Overview Plans

2.1 General View

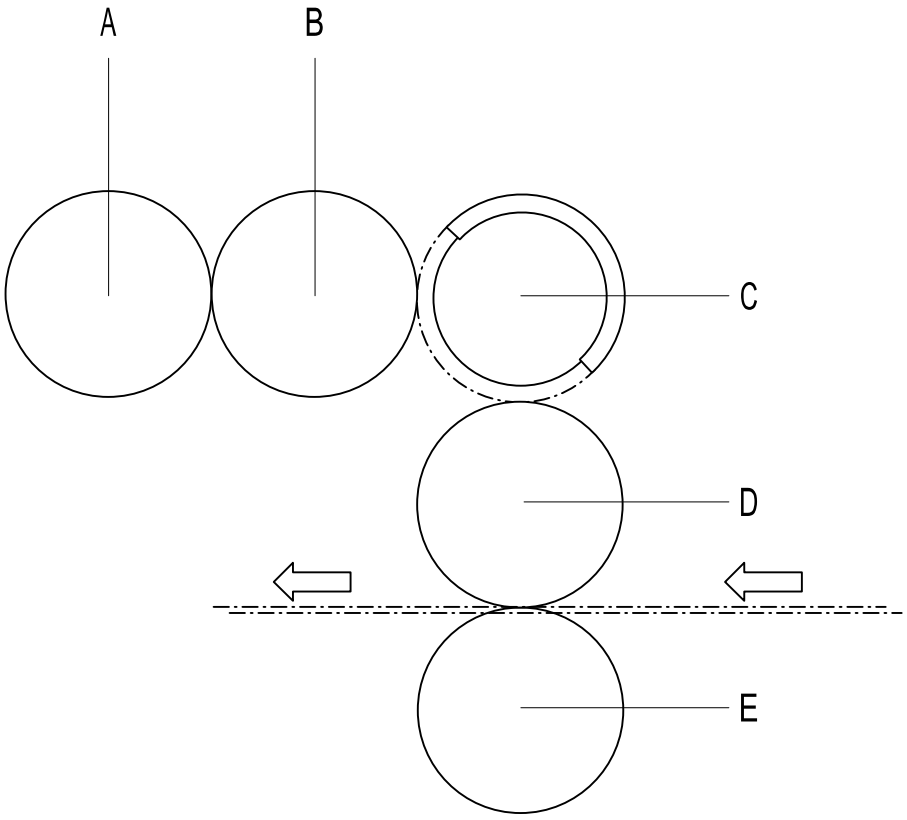


Electrical supply –s. wiring diagramm
Air supply 6 bar; couple plug nom.width 7mm



1. printing unit
2. feeding belt
3. feeding magazine
4. UV-dryer
5. turning star
6. delivery table
7. adjusting unit
8. control board
9. switch cabinet
10. initiator for conveyor operation

2.2 Roller and Cylinder Arrangement – Print Unit



Pos.	Designation
A	screen roller
B	form inking rolller
C	cliche cylinder
D	print cylinder
E	counter pressure cylinder

3 Technical Data

	B	H	L
Machine dimensions:	850 x	1400 x	2080 mm
Material dimensions:	**L**	**B**	
Minimum:	50 x	70 mm	
Maximum:	170 x	340 mm	
Material thickness:	from 0,3 to approx. 2,5 mm		
Printing width:	200 mm		
Printing length:	80 mm using half-saddle; special length upon request!		
Performance:	continuously adjustable from 20 to 250 impressions/min. depending on characteristics of material to be printed		
Main connector:	Main station; rotary field, right		
Electrical supply voltage:	400 V +/- 10%; 3 Ph+N+PE, 50 Hz		
Type of power supply network:	TN–S– network according to IEC 364–4–41		
Electrical power supply:	see type plate (max. 12 kVA)		
Back-up fuse (by customer):	25 A		
Residual-current device (by customer):	300 mA **Caution !** The making current may be briefly increased.		
Air supply (by customer):	6 bar; couple plug nominal width 7 mm		
Heating time (UV-dryer):	approx. 2 minutes		
Weight:	approx. 400 kg		
Max. noise:	about 76 db (A)		
Ambient conditions:	Room temperature: approx. 21 °C Air humidity: approx. 55%		

Important:

The printer is designed for operation with 400 V 3 Ph+N+SL, 50 – 60 HZ. Damages caused by incorrect voltage connections are not covered by warranty.

The air supply has a couple plug (nominal width 7 mm)(suitable for every quick acting couple plug with nominal width 7 mm).

4 Hints of Safety

4.1 General

The VSK cardboard printing machine may be operated by adequately trained personnel only. Damage caused by incorrect supply voltage settings or improper operation are not covered by the warranty.

UV-dryer:	• do not manipulate the dryer during operation (danger of burns)! • we suggest an exhaust for the dryer emission • during maintenance at the UV-dryer protect eyes from UV-rays (danger of blindness/wear eye protection glasses!) • kindly take note of the report regarding ozone measurement of institut Fresenius (as per chapter 4.8)!
Electrics:	• switch cabinet and control panel may only be opened by qualified personnel. • disconnect mains before opening the control panel!
Mechanics:	• protection covers may only be removed for repair or maintenance. • equipment is to be operated only when the protection hood (plexiglass) is closed.

4.2 Installation of the Machine

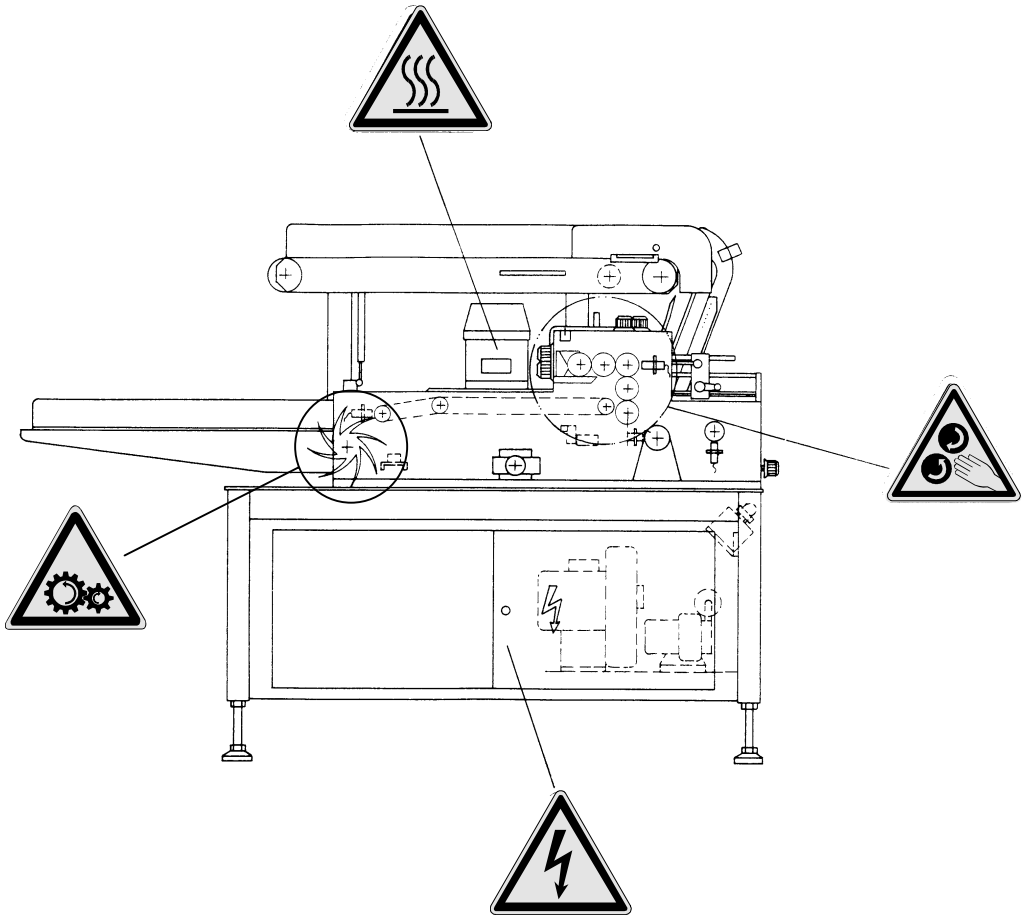
During installation of the vskPRINT 400/410 the following conditions are to be observed:

- Dust-free or as dust-reduced room as possible.
- The room temperature should be about 21°C during operation of the machine.
- The humidity should be about 55% during operation of the machine.
- Even, non-absorbent and anti-static floor with good stability.
- The machine must be installed free from vibration.
- Do not store flammable objects in the immediate vicinity.
- Transport the machine using a lift truck with two prongs, each at least 1250 mm long, with a carrying capacity of 1000 kg.

It is expressly pointed out, that only the materials listed in the specification may be used.

4.3 General Plan of Danger

vskPRINT 400



	**Danger: Electricity**
	**Caution: Hot surface**
	**Danger of crushing, pinch**
	**Beware of moving components when opening machinery**

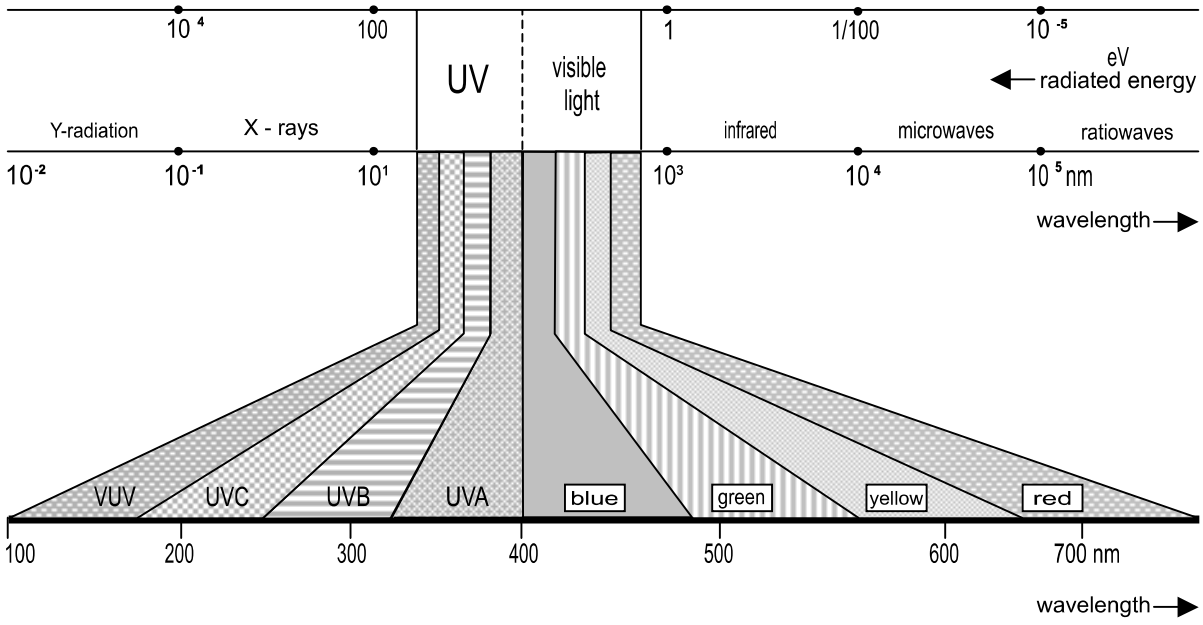
4.4 UV–Radiation

Ultraviolet rays consist of electromagnetic radiation like visible light or radio waves. But UV radiation cannot be detected by the human eye. Per definition, UV encompasses the spectral range of 100 – 400 nm and therefore connects to the blue part of visible light (400 – 780 nm). The largest natural source of UV radiation is the sun. The UV share of sunlight has played an important role for genesis of life on earth. UV light causes photo–chemical reactions in exposed objects. Depending on the energy of the UV radiation, this can have different effects. This is why a division into individual ranges of wave length is required:

UVA– radiation	**400 – 315 nm**
UVB– radiation	**315 – 280 nm**
UVC– radiation	**280 – 200 nm**
VUV– radiation	**200 – 100 nm**

The most important range for industrial use is UVA radiation. UVA radiation is used for curing plastics and adhesives and for fluorescent testing. UVB radiation is the highest energy segment of sunlight and plays an important role in accelerated ageing of plastics. UVC radiation has enough energy to kill micro–organisms. This is why it is used for sterilising air, water and packaging materials. UVA–colours and varnishes may also be dried using UVC radiation with short wavelengths.

Ultraviolet radiation as part of the electromagnetic spectrum.



4.4.1 Hazard from UV Radiation

UVA radiation, which connects to the end of visible light, could also lead to irritation of sensitive mucous membranes of the eye and possibly also to irritation of the skin.

UVB radiation is already hazardous to health; depending on the strength and duration of exposition, they will cause irritation of the skin or burns.

Most dangerous is the energy–bearing UVC radiation, it can cause serious damage to the skin.

In general, it can be said: Ultraviolet radiation causes changes in cells of the skin, best known from sunburns. But artificially generated UV radiation is generally much more intense than the sun. Endangered parts of the body are mainly the eyes (cornea and conjunctiva), lips and skin.

Less dangerous, but molesting is reflected radiation. Consequence of strong reflection glare is mainly fatigue.

4.4.2 Protection against UV Radiation

How do you protect yourself against sunlight? The eyes using sunglasses, the body by corresponding clothing, lips using UV protective cream (especially used by mountain climbers). During UV drying, the reverse method is used. The source of radiation must be completely and hermetically sealed to the environment. The lamp may not be visible from any spot.

4.4.3 Handling of UV Radiation

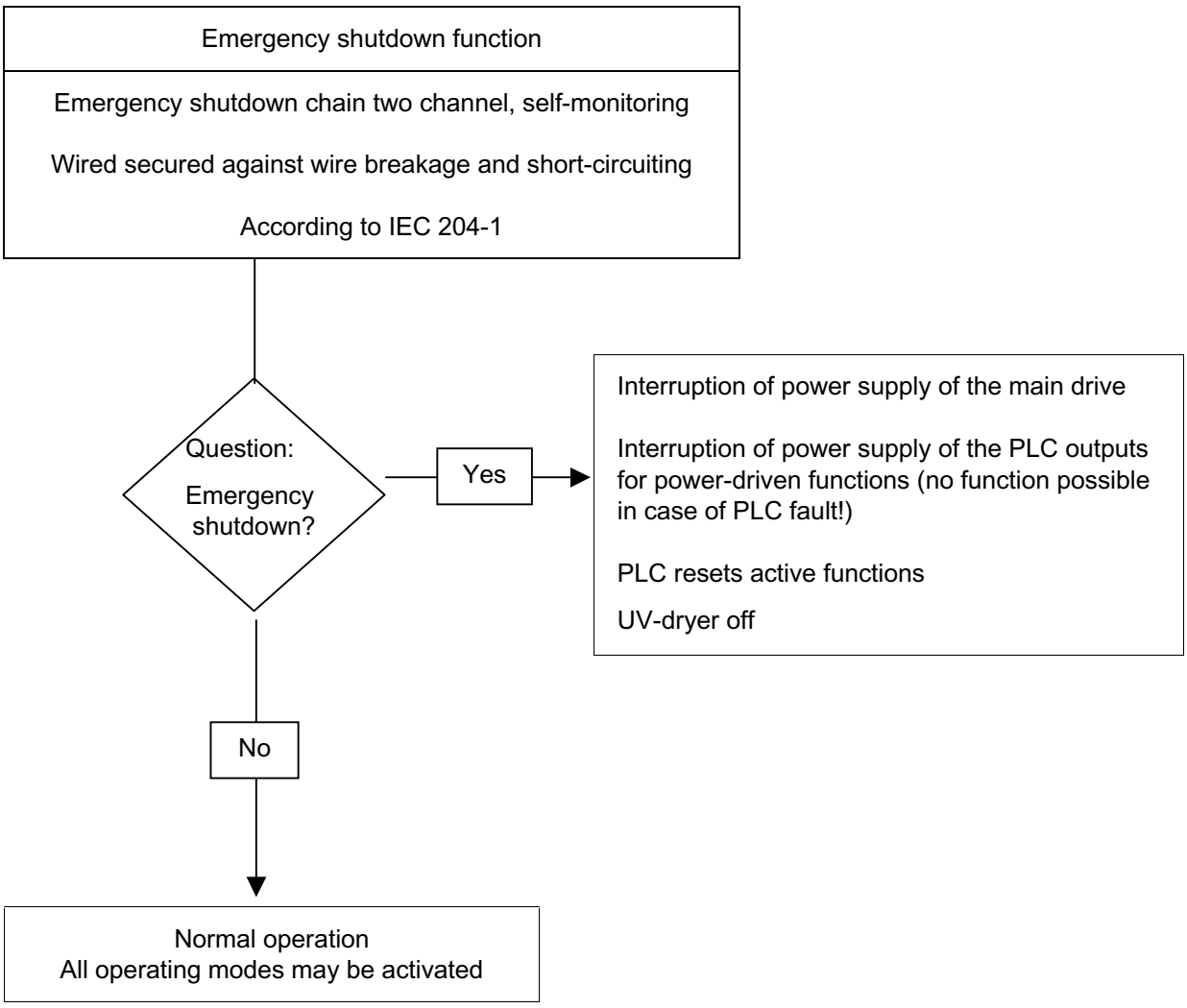
UV radiation is more energetic than visible light. This is why incorrect handling of UV appliances or use of improperly designed appliances may cause damage to the skin and eyes. UVA radiation (315 – 400 nm) is, as scientific research has shown, harmless.

UVB and UVC radiation (315 – 200 nm) can lead to acute and long–term damage to the skin and eyes. Still, this radiation range is needed for some applications. Opaque covers of UV systems or wearing of UV protective goggles and skin covering protects from damage by UVB and UVC radiation.

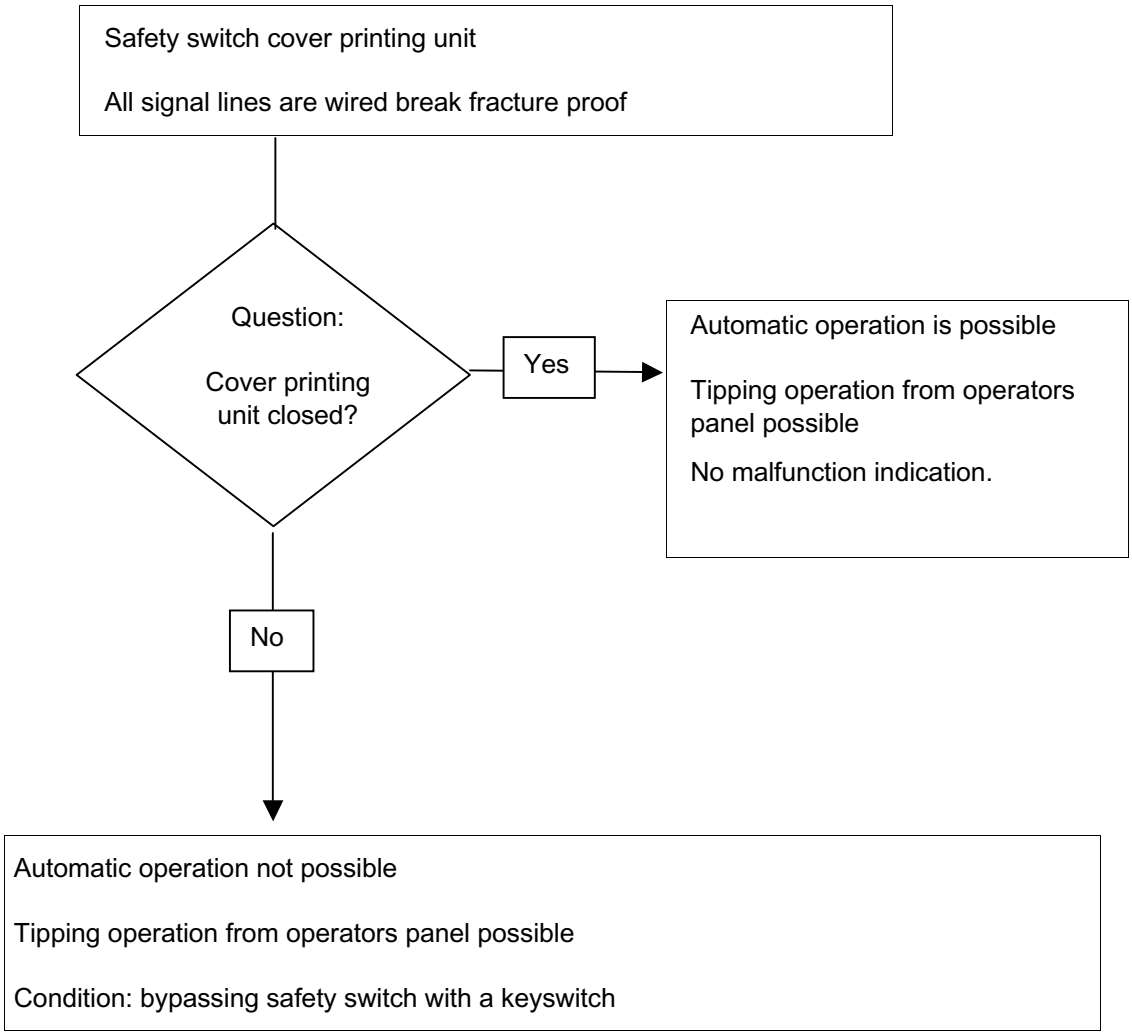
Attention:

Defective UV lamps are hazardous waste! Please dispose of using a corresponding collecting point.

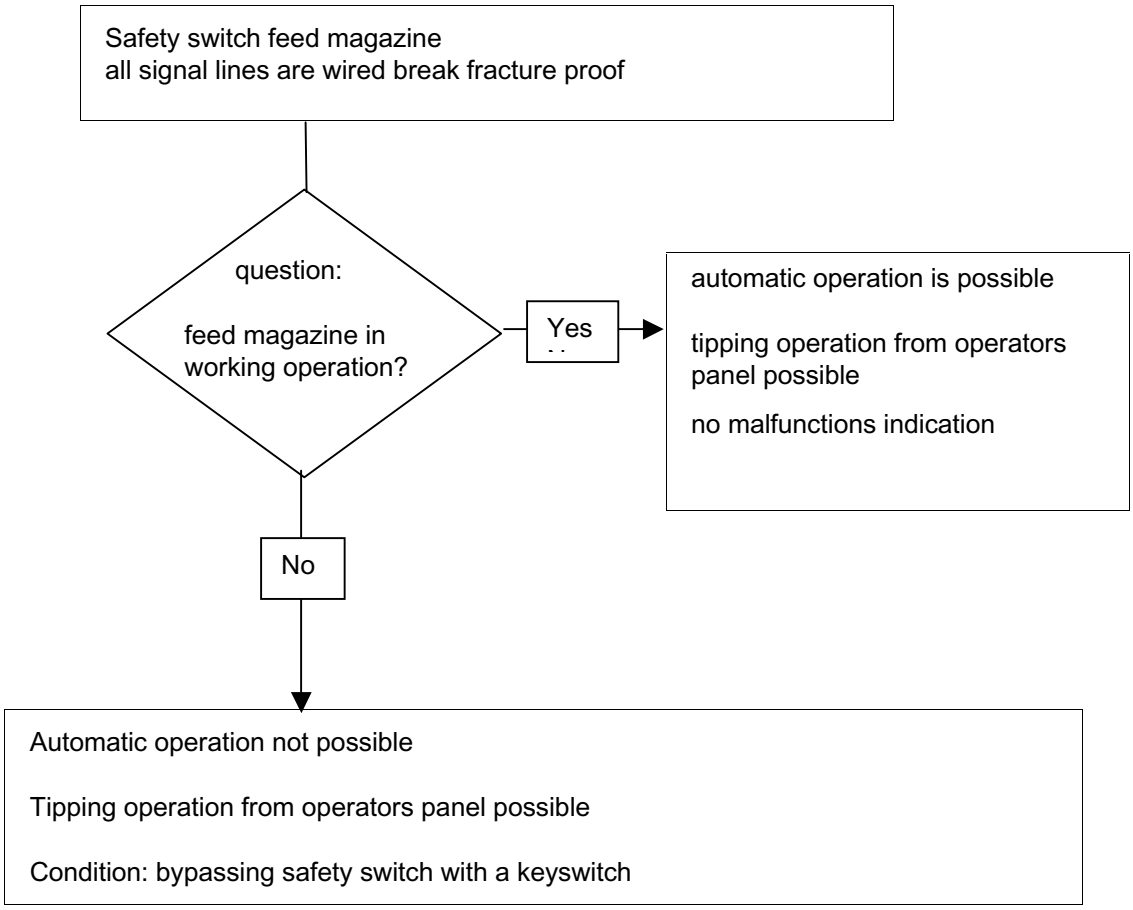
4.5 Functional diagram Emergency Shutdown



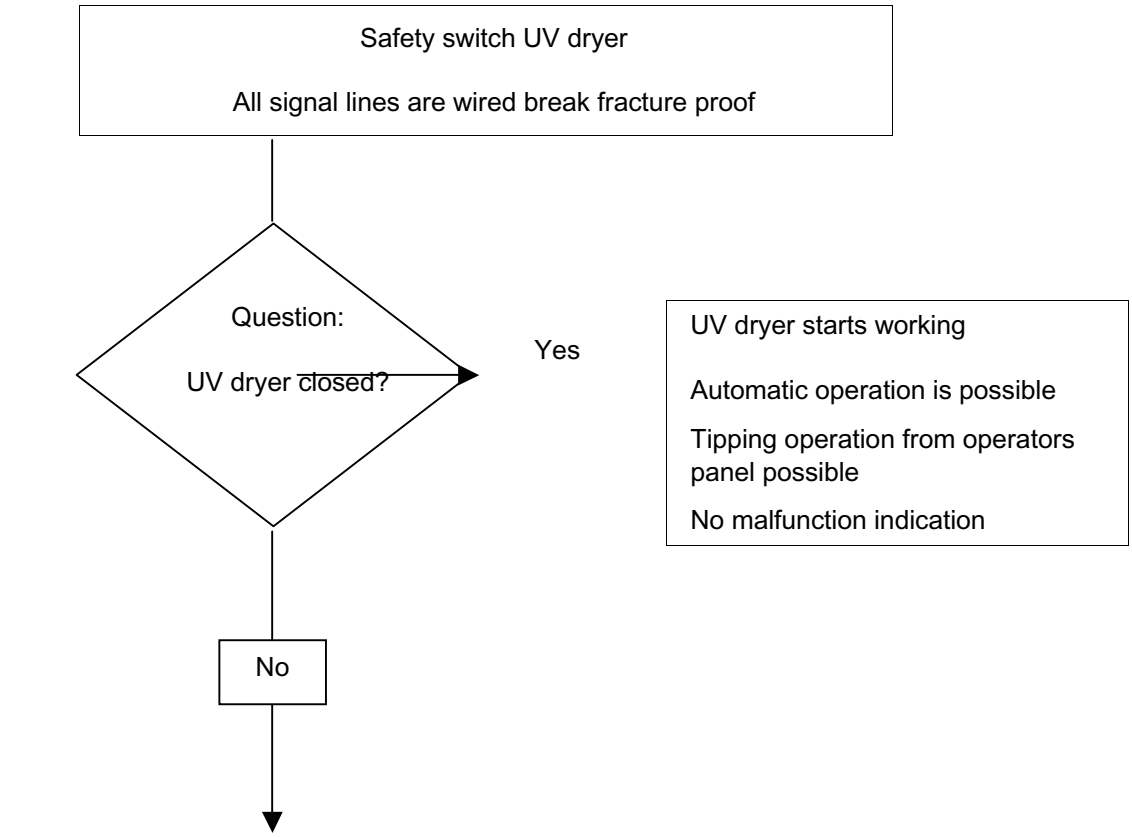
4.6 Functional Diagram Cover for Printing Unit



4.7 Functional Diagram Feed Magazine



4.8 Functional Diagram UV Dryer



4.9 Workplace Measurement

vskPRINT 400/410 (Exposure Measurement)

On August 20, 1998, a workplace measurement of a vskPRINT 410 was performed according to TR GS 402 at our company, regarding OZONE with built-in
UV-drier **XTR0001302**, 2 KV. The measurement was performed by

Institut Fresenius,
Geschäftsbereich Fresenius
Umwelt Consult,
Im Maisel 14
65232 Traunstein

Please find the most important extracts from the Institute's report below:

Description of the workplace under the conditions prevalent at the time of measurement.

The work area tested **(secondary room)** can, in general, be considered to be closed.

Area:	Approx. 4 m x 8 m
Height:	Approx. 2,8 m
Doors:	1 door leading to the corridor, mainly closed 1 open passage to the VSK mechanical service room, closed by a plastic curtain.
Windows:	2 windows, closed (open until immediately before start of the measurement).

The UV-drier was provided with a hood exhaust. An additional blower was used to suck off air, which was then directed outside to the open air. Directly at the opening of the tube (70 mm in diameter), the air velocity was approx. 18 m/s. This results in an exit air flow of approx. 250 m^3/h.

Measurement Method

OZONE – in accordance with VDI 2468, Page 1

Limit:	**mg / m^3 0,2 (lower toxic limit)**
Hazardous substance:	**OZONE**

Ozone Measurement Results

Measuring Point	Sampling Time (min.)	Concentration (mg/m^3)
Outside of the building (summerday)	166	0,19
At the machine, at a distance of approx. 1 m to the outlet side, suction height: 1.6 m	120	0,09
At the machine, at a distance of approx. 1 m to the inlet side, suction height: 1.6 m	120	0,08

Findings:

As has been shown by the results of the workplace measurements under the conditions described, the ozone concentrations determined for the workplace were 0,08 mg/m^3 and 0,09 mg/ m^3. during the simulated print operation. That means that the determined value fell below the lower toxic limit stipulated to be 0,2 mg/m^3 for ozone.

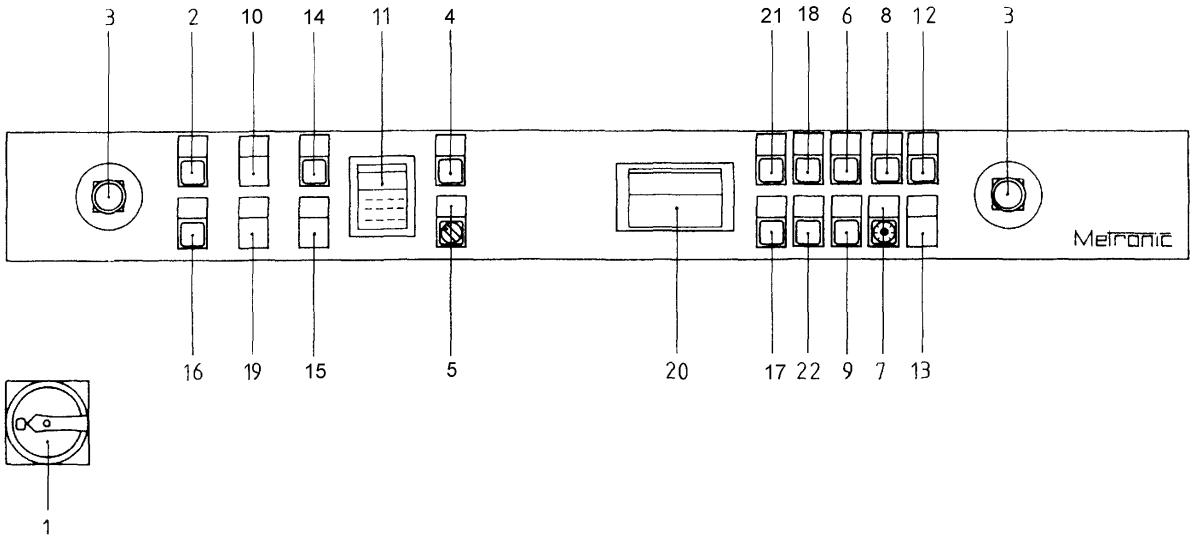
When the UV drier was switched on (exposure peak measurement), the concentration determined was below the specified limit of determination of
0,05 mg/m^3. That means that the momentary value requirements were fulfilled.

On the day of the measurement, the ozone concentration of the open air (reference) was 0,19 mg/m^3 and, thus, distinctly above the values determined at the printer.

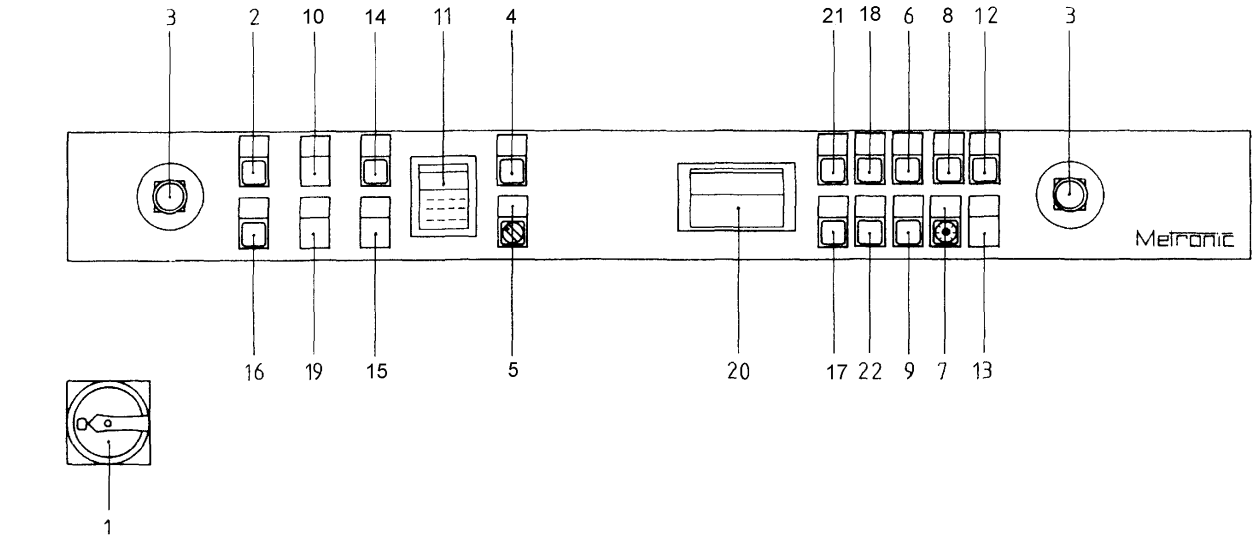
5 Basic Outfit

1 item	hex driver 4mm
1 set	hexagon keys SW 2–10 mm
1 item	screw driver 3,5 mm
1 item	1 er screw driver for recessed-head screws
1 item	ink spatula (width 50 mm)
1 item	spray bottle (250 ml)
1 item	spare blade

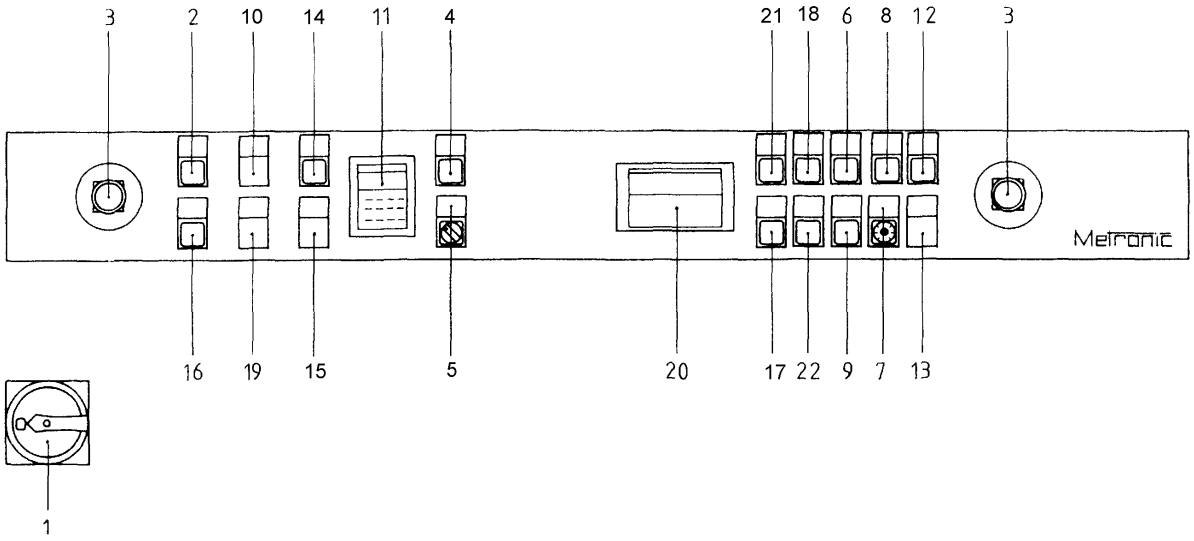
6 Description of Operating Elements



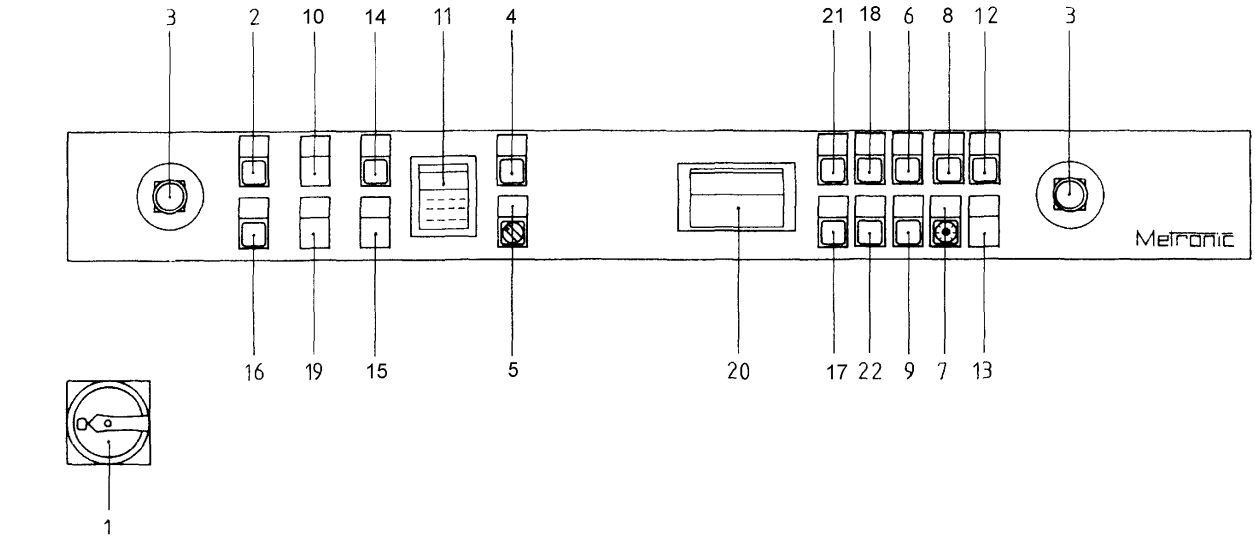
Pos. No./ (BMK)	Element/ Colour	Description	Function	Conditions	Description, Remedies, Add. Info
1 (1Q0)	Main switch	Main switch „0“	To stop the complete plant		Can be padlocked (up to 3 locks).
		Main switch „1“	Plant is in stand-by position		Stand-by functions: Lamp test Malfunctions are displayed
2 (1H0)	Luminous button (white)	Pilot lamp „Power supply“	Displays: power supply voltage provided.	Main switch „ON“ ≙ Stand-by	Control voltage provided
(1S33.0)		Button „Lamp test“	For functional control of pilot lamps	Stand-by	All lamps must be on
3 (1S0.1) (1S0.2)	Emergency push button with notch (red)	„Emergency Stop“	For quick shutdown of plant		
4 (1H64.1)	Pilot lamp (blue)	„Material Malfunction“			See troubleshooting test table contained in the enclosed set of circuit diagrams.
5 (1H64.0)	Pilot lamp (yellow)	„Machine Malfunction“			See troubleshooting test table contained in the enclosed set of circuit diagrams.
6 (1H64.3)	Luminous button (white)	Pilot lamp „Operation on“ is on	Drive is on – Plant starts operation again		When switching off, drive will always stop at „0“ position
(1S32.1)		Button „Operation on“	Switch on printing operation	Stand-by operation and no malfunction	Lamp shows „Operation on“; „Drive motor on“
			Press and hold the button to empty the input magazine.	Level in the input magazine too low	



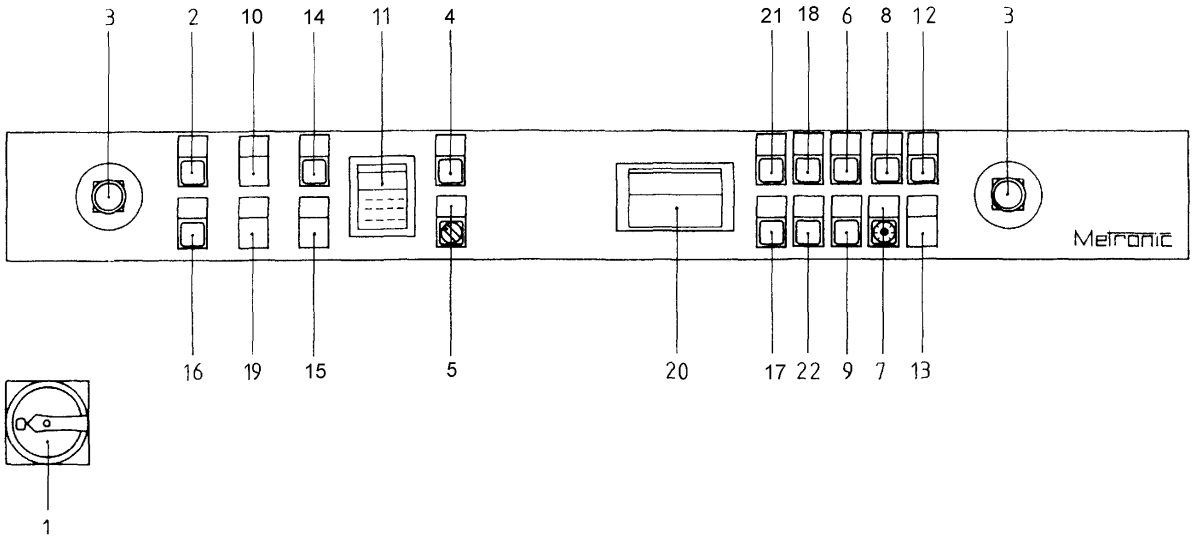
Pos. No./ (BMK)	Element/ Colour	Description	Function	Conditions	Description, Remedies, Add. Info
7 (1R32.02)	Potentiometer	„r.p.m.“	For continuous setting of speed	Printing operation	The max. r.p.m. is substantially depending on the drying; the drying time is dependent on: material, material surface, ink quality, ink viscosity, ink quantity, image, performance and age of the UV lamp
8	Luminous button (white) (1H64.4)	Pilot lamp flashes „single printing/drive to „0“–Position	Machine goes to „0“–Position	Stand-by operation	
		Pilot lamp „single printing/drive to „0“–Position is on	Machine prints a cardboard whenever the button is actuated.		
	(1S72.7)	Push button „single printing/drive to „0“–Position	Machine prints a cardboard whenever the button is actuated.		
9 (1S32.0)	Button (red)	„Printing operation off“	For switching off of printing operation		Machine in „0“–Position
10 (1H64.2)	Pilot lamp (green)	Light is on at initial setting	Initial setting	Printing unit in „0“ position and no malfunction provided	
		Light flashes at initial setting	Operation - end	The number set at the counter is reached.	Reset the counter; simultaneously actuate the “D” and “R” buttons.



Pos. No./ (BMK)	Element/ Colour	Description	Function	Conditions	Description, Remedies, Add. Info
11 (1A64.3)	Electronically programmable meter	Unit load counter	Counts accumulative with switching off of unit load; when simultaneously pressing „P“ and „R“ the preset value is stored and the display is set to „0".	Printing operation	Preselection of unit load: Press button „P“ during the input and enter the required unit load serially (previous value will be reset); in order to control the unit load value while counting button "P" can be pressed.
			Counts accumulative without switching off of unit load		Set unit load to „0“ ; (press „P“ and „0“ simultaneously)
12 (1H64.7)	Pilot lamp (green)	Is lit as long the counter-pressure cylinder is closed.	The counter-pressure cylinder has moved to the print cylinder.	Printing operation	
		Flashes at malfunction	The counter-pressure cylinder failed to reach the print cylinder.		Incorrect setting of the printing unit; check the setting.
13* (1S32.5)	Position selector (momentary-contact switch); (black), if available	Conveyor belt for/back	For manual operation of the feeding belt	Stand-by operation	Inserted material can be transported to the feeding slot. *Option
14 (1H64.6)	Pilot lamp (green)	Light is on: UV dryer ready	Steady light when dryer is ready	Stand-by operation Printing op.	
		flashes at dryer malfunction			- UV lamp not ready - UV lamp in heating phase - UV lamp not lit - UV lamp over temperature lacking cooling.
15 (1S33.4)	Position selector	„UV dryer 50% / 100%“	UV dryer half and full load	Stand-by operation	- During the heating phase UV drier starts with 100 % full load - Radiant power is at 50 % in stand-by operation= half load
				Printing operation	- In printing operation half and full load is possible according to position of the switch



Pos. No./ (BMK)	Element/ Colour	Description	Function	Conditions	Description, Remedies, Add. Info
16 (1S0.3)	Button (blue)	Reset-Emergency-Stop	Stop Emergency Stop Function	All Emergency Stop Buttons are unlocked	
17 (1S1.1)	Key-operated switch	Printing mode / standby-mode	To switch from printing mode to standby-mode and back	Printing mode: Safety switches of printing unit and magazine are closed	Printing mode: Master engine will be immediately switched off if safety switches are open.
				Standby-mode: Safety switches must be bypassed	Standby-mode: It is impossible to switch to the printing mode if the safety switches are bypassed for the standby-mode.
18, 19	Not occupied				
20 (1A65.2)	Digital unit load display	„Production performance display“	Immediately shows piece number per minute	Printing operation	
21 (1S33.1)	Button (blue)	Failure acknowledgement	Acknowledges failures.	Stand-by operation printing operation	
22 (1S32.2)	Button (white)	„Setting up operation“	When pressed, printing unit moves with lower r.p.m.	Stand-by operation	For cleaning and adhering the cliché; setup and maintenance operation. Move the machine to the “0” position again, using the “Single printing/drive to “0” position” button.



Pos. No./ (BMK)	Element/ Colour	Descrip-tion	Function	Condi-tions	Description, Remedies, Add. Info
Not visible	Signal horn (available beginning with machine no. 1069)	Signal horn Intervallton	Warning, Cliche is not in normal position („0“-Position)	Stand-by operation	If it fails to be in the basic position, the cliché may be damaged. Therefore, it is absolutely necessary to move the machine to the basic position using the “Single printing/drive to “0” posi-tion” button.

7 Commissioning

7.1 Starting the Machine

• Release „emergency push button“ in direction of the arrow.	
• Operate main switch „ON“.	
• Release Reset-Not-Stop.	
pilot lamp „main“ illuminates.	• inking unit in operation • conveyor belts are running • Failures are indicated by pilot lamps (vskPRINT 400) or are shown on the display (vskPRINT 410). For possible causes and elimination of errors, see the troubleshooting test table contained in the enclosed set of circuit diagrams! • UV–dryer is on, ready after heating phase.
Set the counter to the desired piece number.	• The machine turns off as soon as the desired piece number has been reached.
• Select slow speed	
When the machine is ready to work: Push luminous button „printing operation on“.	• control lamp „printing operation on“ illuminates • motor of inking unit stops • drive motor starts operating • machine starts the printing process
• Select desired speed	

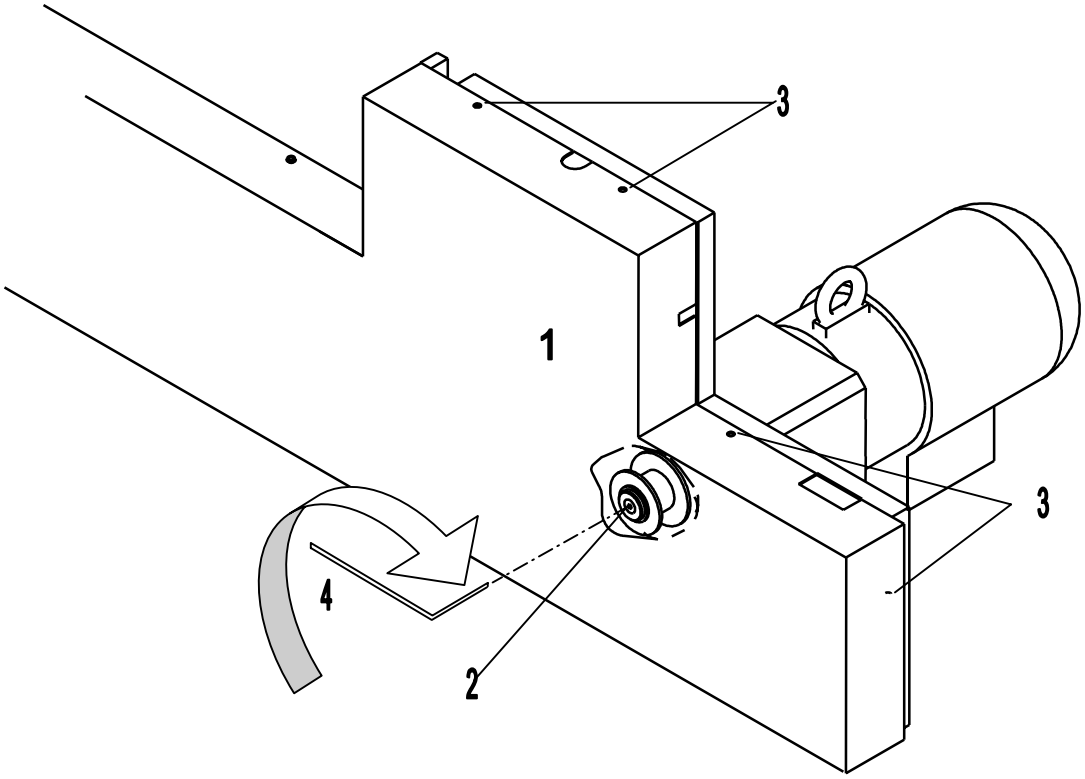
7.2 Stopping the Machine

• to stop the printing process.	• Push the button „printing operation off“.
• Printing unit stops in „0“ position, i.e. the cliche is without contact to the cylinder (= also working point for to exchange cliche and rollers) as well as to clean the inking unit.	

7.3 Manually Moving the Machine

Description of how to move the Machine manually:

- Loosen the screws (pos. 3) using a Philips screwdriver, and remove the SI safety cover (pos. 1).
- Using an SW-5-mm Allen wrench (pos. 4), turn the cheese head screw (pos. 2) in clockwise direction to move the machine in working direction.



8 Operation

8.1 Magazine

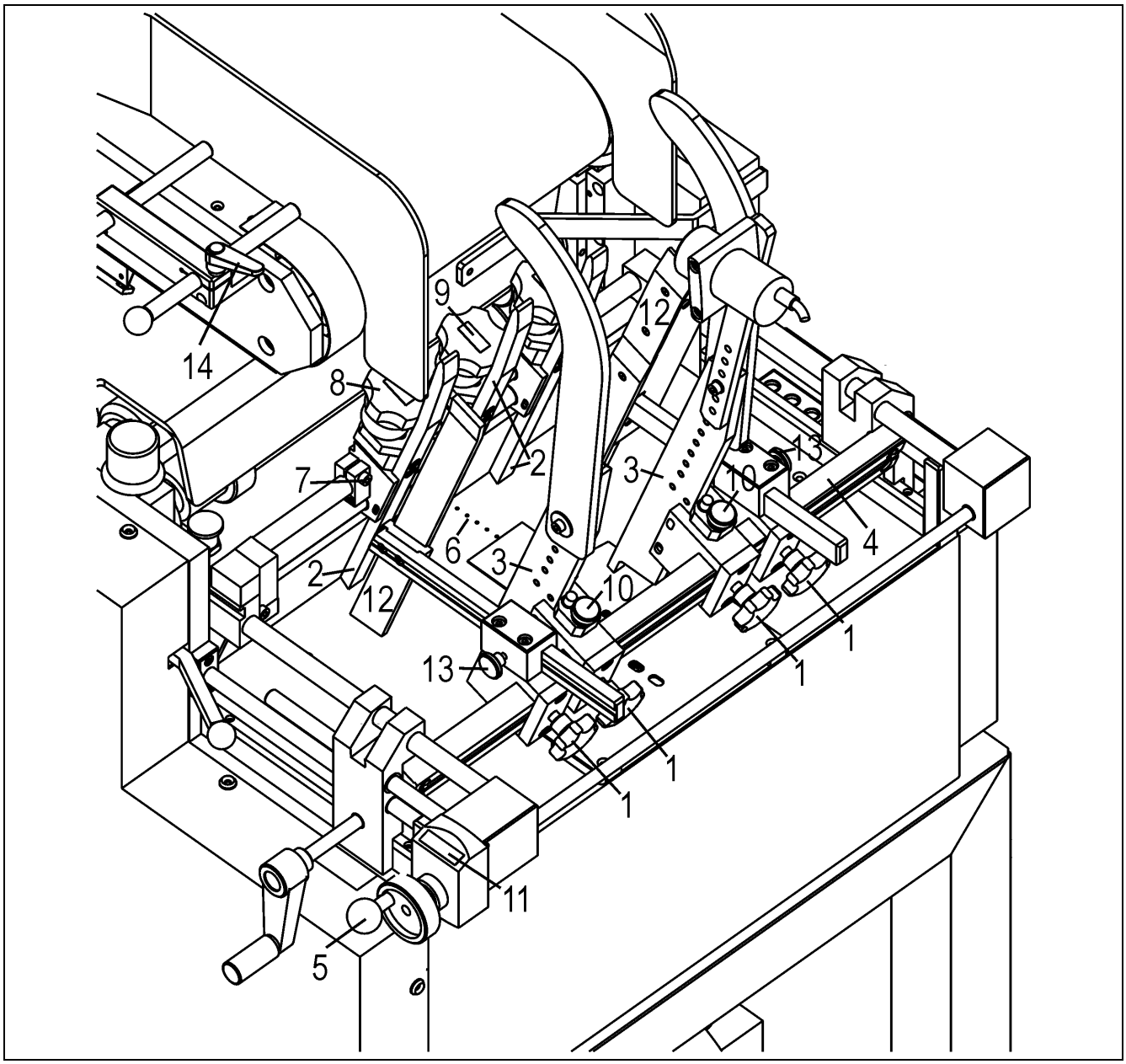


Illustration 1: Magazine

8.1.1 Adjusting the Magazine

➢ Press the illuminated push button SINGLE PRINTING / MOVE TO 0-POSITION on the switch cabinet console

☑ Machine moves to starting position.

➢ Release the clamps (1) on the fixing devices of the holding ledges for the side insertion ledges (12) and the feed ledges (3).

➢ Push the side insertion ledges (12) outwards on the carrier rail (4).

➢ Push the feed ledges (3) outwards on the carrier rail (4).

➢ Use a slide that matches the size of the folded cardboard box used.

You will find further details on changing the slide in the chapter **Changing the Slide Format.**

➢ Turn the adjuster unit (5) of the carrier rail clockwise to the limit stop.

➢ Put a folded cardboard box on the vacuum bore holes (6) in the table plate.

➢ Adjust the folded cardboard box so that the center of the base body is adjacent to the mid insertion ledge of the three insertion ledges (2).

➢ Release the locking screws (7) of the two outer insertion ledges (2):

  ➢ You must release two locking screws.

  ■ Tool: hexagon socket key (size 4), included in the standard equipment.

➢ Move the two outer insertion ledges close to the rim of the base body of the folded cardboard box (See figure).

➢ Tighten the locking screws (7) of the outer insertion ledges.

  ➢ You must tighten two locking screws.

  ■ Tool: hexagon socket key (size 4), included in the basic equipment.

➢ In order to adjust the distance between the lower edge of the insertion ledge and the table plate, turn the Positiometer (8) of all three insertion ledges:

  ➢ Adjust each Positiometer of the insertion ledges so that the reading (9) exactly indicates the thickness of the cardboard (in mm).

➢ Move the feed ledges on the carrier rail so that they exactly oppose the outer insertion ledges.

  If the folded cardboard boxes are smaller than the slide, the feed ledges must be placed higher than usual. Otherwise the slide and the feed ledges will collide.

  ➢ In order to place the feed ledges higher, turn the adjusting screw (10) counterclockwise. Recommended reference variable: slide height + 0.1 mm.

➢ Tighten the clamps (1) on the fixing device of the feed ledges.

➢ The distance between the feed ledges and the table plate can be adjusted on the adjusting screws (10):

  ■ The feed ledges must not touch the table plate.

  ■ The distance must be smaller than the thickness of the folded cardboard box.

  ■ Recommended distance (reference value): 0.1 mm.

  ■ Turn the adjuster unit (5) of the carrier rail counterclockwise until the reading (11) of the adjuster unit of the carrier rail (5) shows the width of the folded cardboard box.

➢ Move the side insertion ledges (12) on the carrier rail to the height of the outer edges of the folded cardboard box.

➢ Tighten the clamps (1) on the side fixing devices of the insertion ledges.

➢ Release the clamping screws (13) of the side insertion ledges (12).

➢ Move the side insertion ledges (12) to the outer edges of the folded cardboard box.

  Distance between side insertion ledge and folded cardboard box: approx. 0.1 mm.

➢ Tighten the clamping screws (13) of the side insertion ledges (12).

☑ The magazine is adjusted.

8.1.2 Adjustment of Conveyor Belt Guides

➢ Release the clamps of the front and back conveyor belt guide.

➢ Move the front and back conveyor belt guide to the height of the opposing feed ledge.

➢ Close the clamps.

8.1.3 Changing the Slide

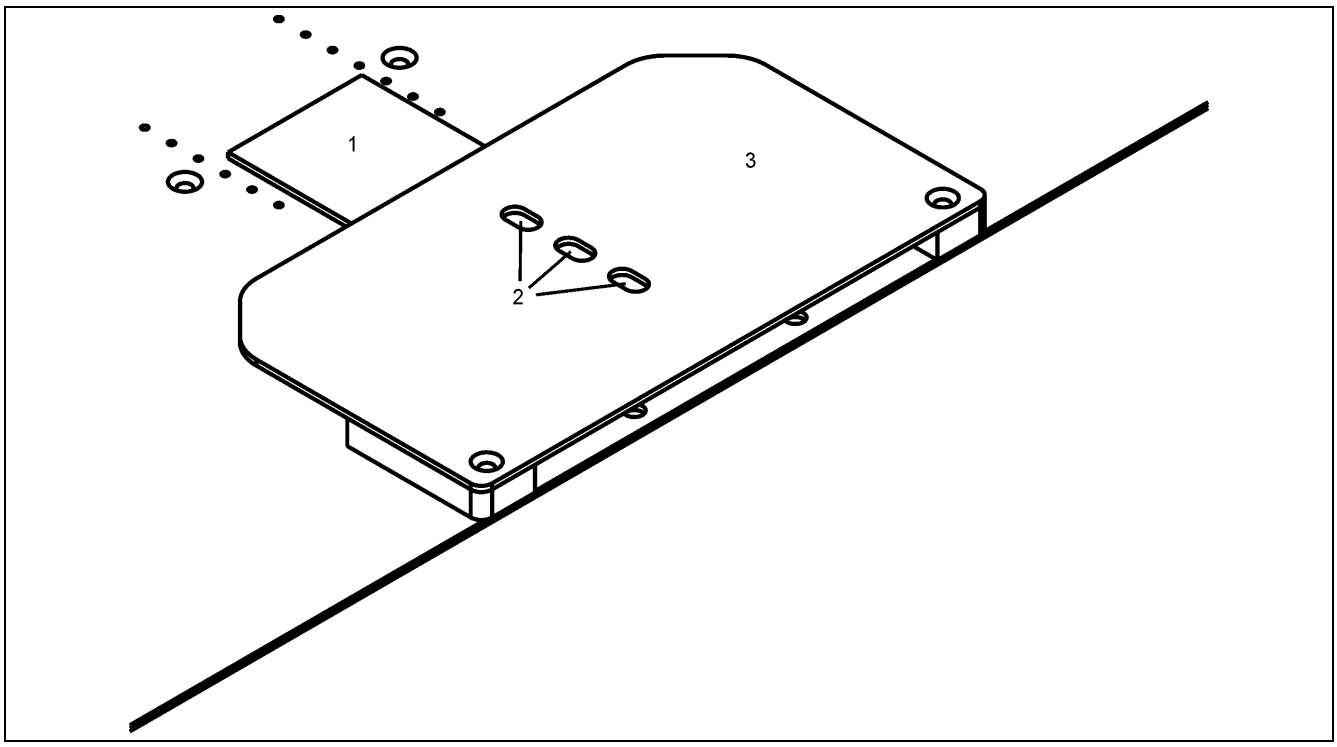


Illustration 2: Changing the Slide

- In case of a matching slide the leading edge of the slide and the trailing edge of the folded cardboard box must be 2 to 5 mm apart.
- Put together slide and folded cardboard box must have a length of 278-280 mm.

➢ By pressing the button **STANDBY-MODE** move the slide (1) so that the bore (2) of the finger guard (3) is congruent with the hexagon socket screw.

➢ Unscrew the hexagon socket screw through the bore (2) of the finger guard with the hexagon socket key included in the tool kit.

➢ Take off the slide

➢ Push the new slide in to the limit stop.

➢ Clamp the new slide with the hexagon socket screw.

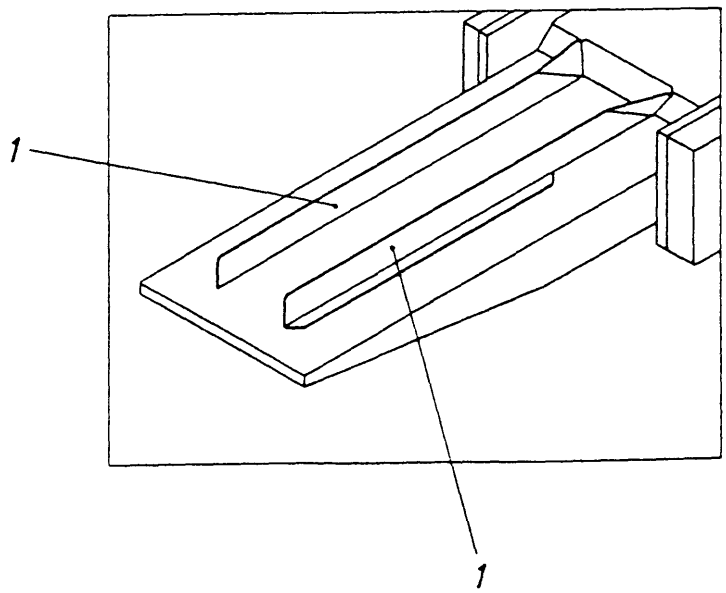
➢ Move the slide (1) to the backmost position by pressing the button **STANDBY-MODE**.

☑ The changing of the slide is completed.

8.2 Adjustment of Delivery Table

The special aligment system for printed material on the delivery table allows for the removal of the finished product during the printing process.

Individually adjust the side guide plates (pos. 1) according to the width of the material to be printed.



8.3 Feeding Belt (Option)

The cartons are put imbricatedly on the feeding belt which can be tilted back. The intermittent advance of the feeding belt is released by the level initiator, it is that as soon as the level initiator does not „recognize“ any cartons, the feeding belt advances.

- When there are no more cartons put on the belt, the machine stops the continous working process, as soon as the optical fiber is not covered anymore.
- The cartons which are still in the magazine can be processed by operating the luminous button („print operation ON “).
- For the purpose of changing the printing motif, as well as for changing the print cylinder and cleaning the printing unit, the feeding belt can be tilted back.

If it is necessary to tilt the belt while there are still cartons left on to, pay attention to the following point: - By a short turn of the position selector to the left the feeding belt with the cartons must be run to the left, so that the cartons cannot tip into the magazine anymore.

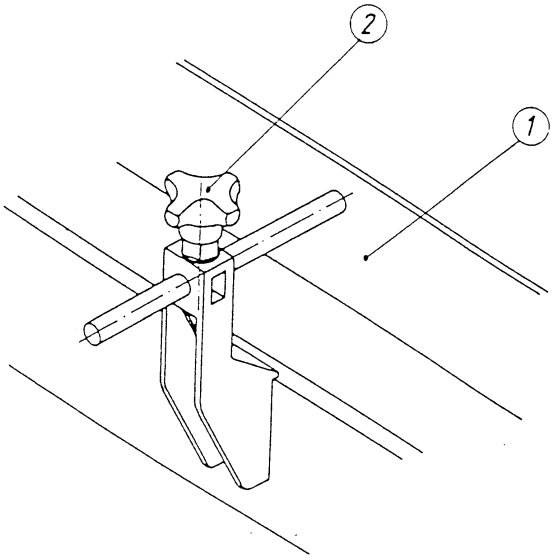
Attention:

When the carton format is changed, the two guide rails of the feeding belt as well as the arcs and the feeding magazine must be adjusted to the new format.

Adjustment of Feeding Belt:

Due to the special advance system of the material blanks, it is possible to put the cartons imbricatedly on the feeding belt without any problem also during the printing process.

➢ Adjust the guiding plate (pos. 1) to the carton size by loosening the clamping handles (pos. 2) and fix them again after the adjustment.



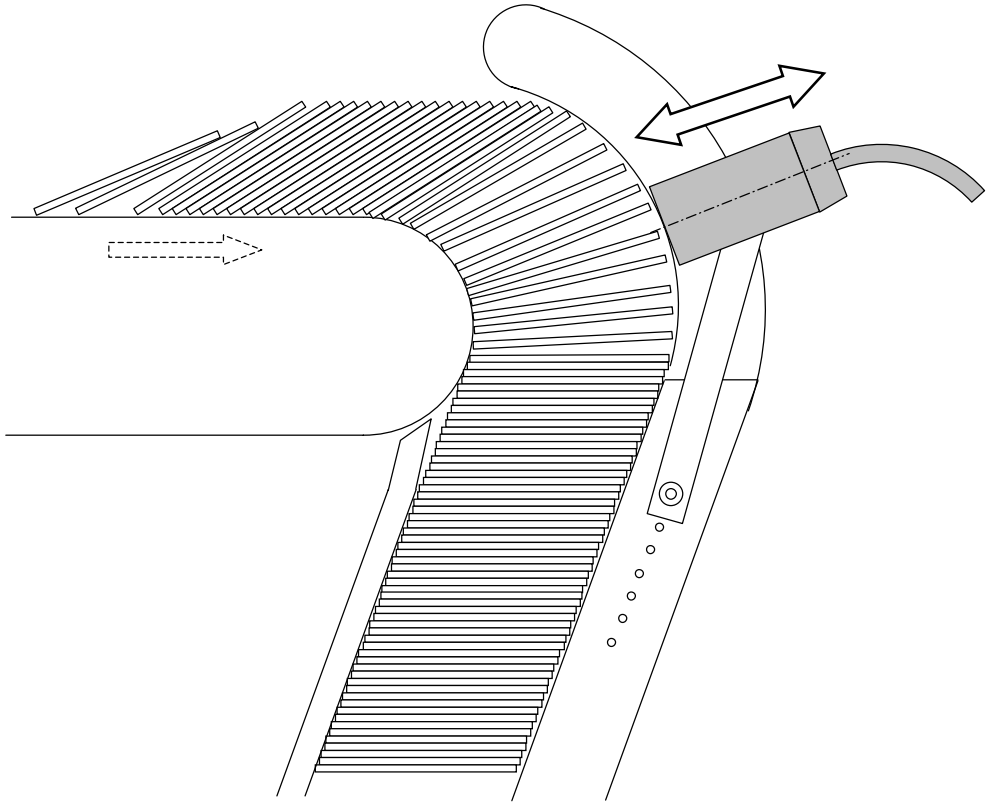
8.4 Adjustment of Level Initiator on Feeding Magazine (Option)

➢ Fill in feeding belt and feeding magazine.

➢ Fitting the initiator in hight of feeding belt near by the carboards (printing material) till the initiator signal lamp lights up.

In case there is no reading at the initiator the intervals at the cheese head screw at the initiator has to be adjusted to max.

☑ If the level of the feeding magazine is fallen below, the pilot lamp at the initiator must turn dark; during print operation, the feeding beld starts running.

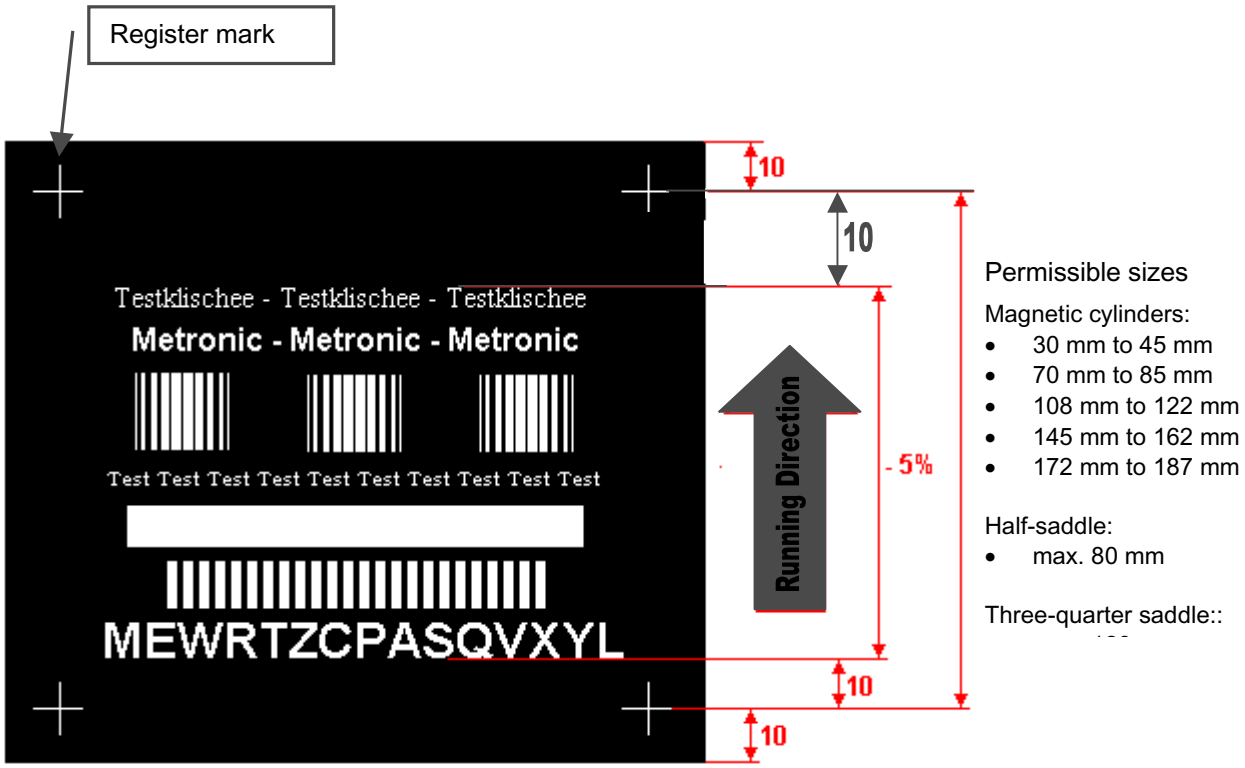


8.5 Generating a Cliché

Using a PC and a suitable exposure unit, you can generate your own clichés.
In some cases, *Corel Draw* can be used as software, and *Pro Barcode* for barcodes.
In order to achieve optimal results, we recommend, especially for generating the film, to use the professionell service of reprography/setting agency.

8.5.1 Template Settings

To achieve the desired result, it is necessary to precisely observe some fixed sizes during creation of each design. These size specifications vary depending on the machine design (half-saddle cylinders or magnetic cylinders). For that reason, it is reasonable to set up a template in the layout program used, which is adapted to your machine variant.
Even if you do not generate the cliché yourself, but order it completely from a reprography/setting agency, the following parameters must be observed (given in mm). Please ensure to inform the persons involved in making the film of the parameters specified.



Permissible sizes

Magnetic cylinders:
- 30 mm to 45 mm
- 70 mm to 85 mm
- 108 mm to 122 mm
- 145 mm to 162 mm
- 172 mm to 187 mm

Half-saddle:
- max. 80 mm

Three-quarter saddle::

In order to patch the extension of the cliche mounted on the cylinder, at the vsk 400/410 the film-length is **reduced by five percent**.

- **Spacings:**
  Between register mark and film edge: 10 mm
  Between upper text edge and register mark: 10 mm
  Between lower text edge and register mark: 10 mm

- **Line widths:**
  Register marks: 0.1 mm (0.3 pt)

- **Gauge factor:**
  Flexographic printing plates are produced in flat exposure units. For that reason, the expansion of the relief on the cylinder must be taken into consideration during film production. This is achieved in the course of film production by accordingly shortening the print image in running direction. The following shortening formula is applicable to the recommended flexographic printing plate materials BASF-WSE II 73 (magnetic cylinder type) and BASF-WFM 70 (half-saddle type).

  $$\frac{\text{Expansion constant} \times 100}{\text{Cylinder perimeter}} = \text{percentage of film shortening}$$

  For the vskPRINT 400/410, we recommend to shorten the entire area to be printed in the running direction of the cylinder by **five** percent.

8.5.2 Mirroring the template

Since the printing method used by the vskPRINT is the indirect flexographic printing method, the film used must be negative, i.e. its sensitized side must be mirror-inverted. To achieve this, the completely processed template must be mirrored by the program used. Example:

Template before it is mirrored:

The laser printout must look like this:

8.5.3 Exposuring the film by a reprography/setting agency

Let exposure your template by a professional reprography/setting agency of your choice. By this way, you will achive better results than exposuring the film by yourself. Tests even with special laser printing foil, toner condensor and toner condensing agent did not lead to satisfactory results.

8.5.4 Exposing, Washing Out, Drying

Expose, wash out and dry the cliché material as instructed (see the operating instructions for the BASF nyloprint® system combination, order no.: HG01K003). Ensure that the text is exposed at a right angle (90 degrees) to the roller direction. As experience has shown, the best results can be achieved by using the following exposure times:

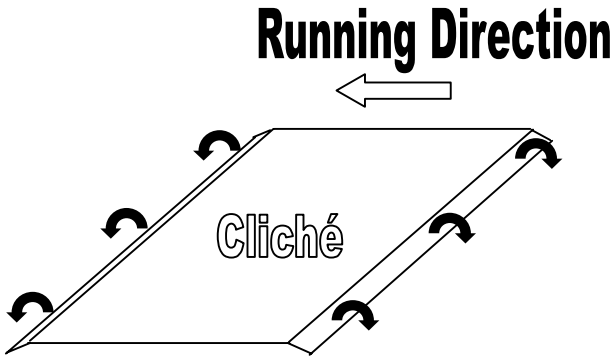
- **WFM 70** (for half-saddle type; size: 305 mm x 430 mm, order no.: ZC01B070):
  Exposing: 3 minutes
  Washing out: 3 minutes at 30 °C
  Drying: 15 minutes at 60 °C
- **WSE II 73** (for magnetic cylinder type; size: 270 mm x 340 mm, order no.: ZC01B502)
  Exposing: 3 minutes
  Washing out: 5 minutes at 30 °C
  Drying: 15 minutes at 60 °C

8.5.5 Cutting the cliché

Using the register marks, cut the dried cliché at right angles.

8.5.6 Magnetic cylinder type only: folding the cliché

Fold the upper and lower edge (seen in running direction) of the cliché on a width from about 3 mm. Folding the cliché-edges, use right tool, a vice for example.

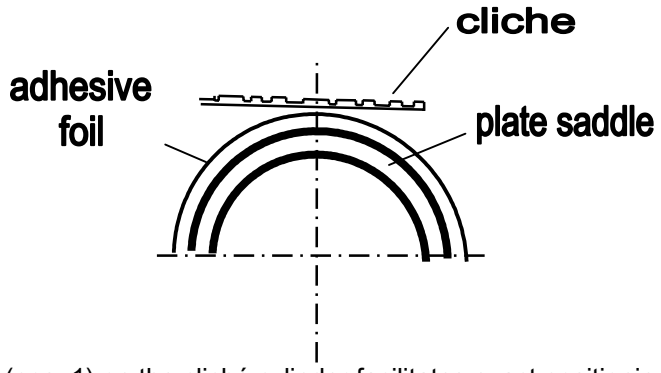


8.6 Plate Mounting

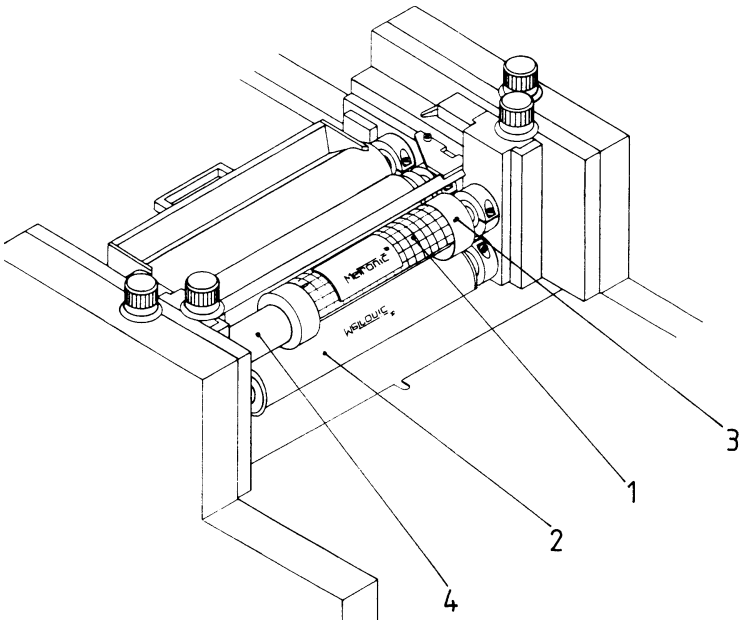
8.6.1 Mounting of the Cliche on the Plate-Saddle (Standard)

The print cylinder (pos.2) is to be cleaned everytime the plate is exchanged.

1. Cut a double-sided adhesive foil to a size approx. 10 mm larger than the cliché (both in length and width).
2. The cliché saddle is positioned on the cliché cylinder. Define the position of the cliché according to the position of the material to be printed. A line screen (pos. 1) on the cliché cylinder facilitates exact positioning.

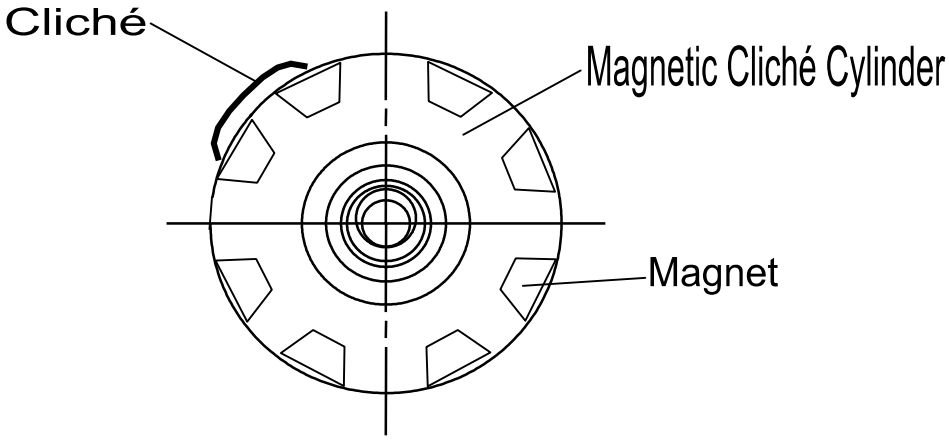


3. Remove the cliché saddle from the cliché cylinder.
4. Apply the adhesive foil to the cliché saddle at the position defined beforehand.
5. Press the cliché, which must be exactly aligned with the line screen, onto the adhesive foil.
6. Place the cliché saddle onto the cliché cylinder (pos. 4) again, while ensuring that the groove in the cliché saddle and the pin at the clamping ring correspond with each other.
7. Fix the cliché saddle by turning the clamping nut (pos. 3) in clockwise direction.



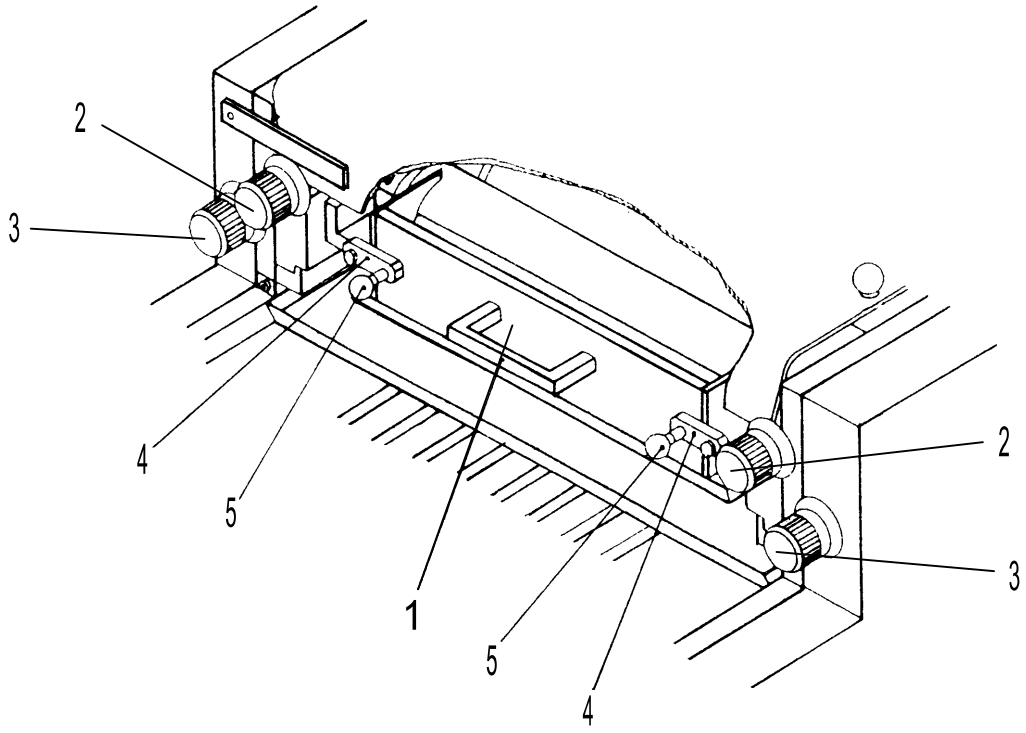
8.6.2 Mounting of the Cliché on the Magnetic Cliché Cylinder (Optional)

Important: Mounting the cliché on the optional Magnetic Cliché Cylinder, the folded edges of the cliché must be over the field of a magnet.



8.7 Adjustment of the Ink Unit

- ➢ When machine is turned off set doctor blade chamber (pos.1) into holding frame. Fold holding devices (pos.4) back in ward and tighten clamping screws (pos.5) until side shields of doctor blade chamber sit closely on the screen roller (only tighten moderately!).
- ➢ Apply ink onto the screen roller with a spatula and turn on the machine using main switch and „reset“-button. (The ink will be transported into the doctor blade chamber by the screen roller).
- ➢ Move form inking roller onto screen roller using the adjustment knob (pos.2) until an even ink lays has develloped on both rollers (optimum adjustment: bushes of the form inking roller in horizontal position).
- ➢ Adjust ink unit by us of the adjustment knobs (pos.3) onto cliche cylinder going step by step – after each adjustment step push button „adjustment operation“ and keep it pushed down until the print unit has finished one whole operation. Afterwards check if ink transfer onto the cliche has taken place, if necessary repeart procedure.
- ➢ Please take care that the minimum filling quantity always remains steady. The minimum filling quantity is exceeded if during stand by operation no ink circulation may be recognized.

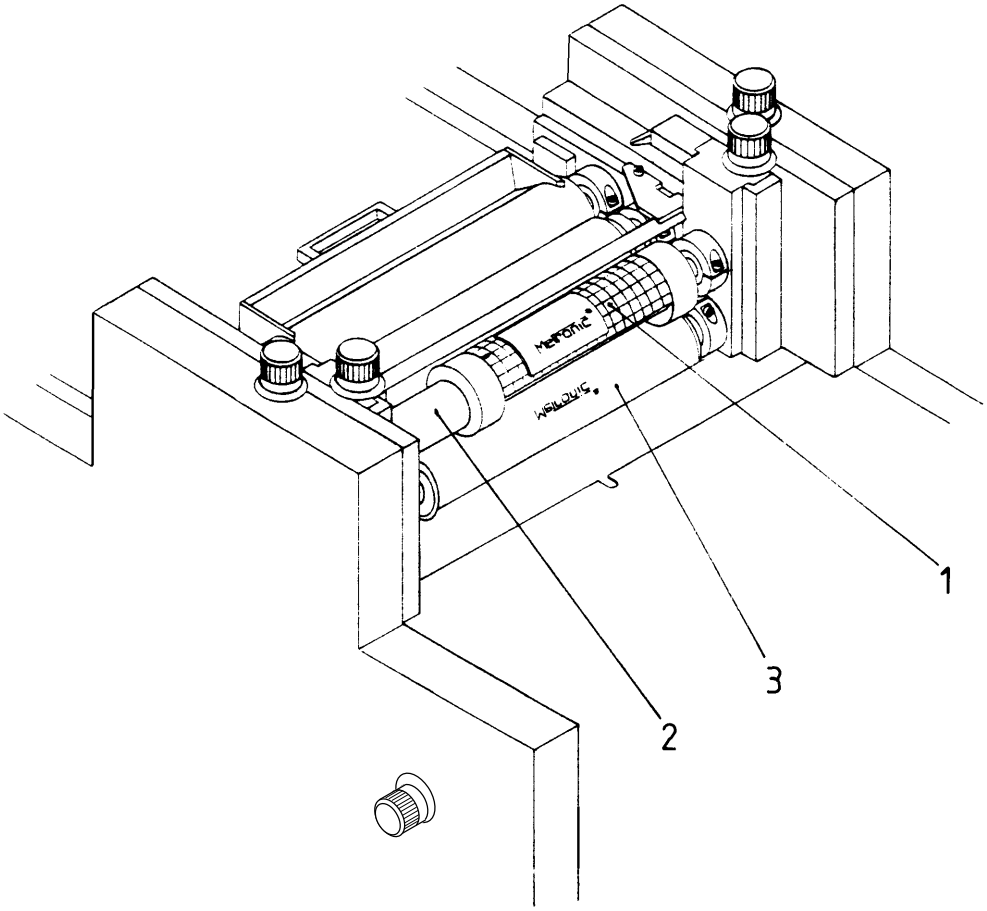


8.8 Positioning of the Print Impression - Lateral

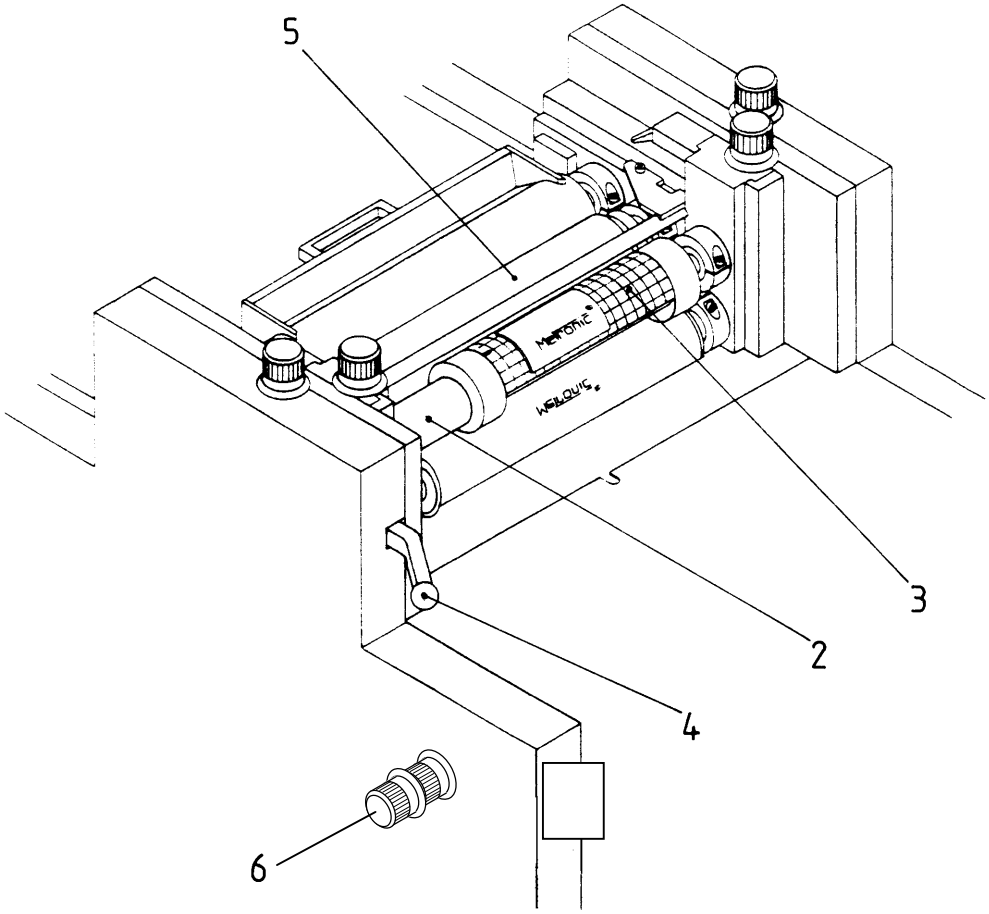
- by means of plate position on the plate half saddle (pos. 1).
- by shifting the plate half saddle on the cliche cylinder base body (pos. 2).

Attention:

The print cylinder (pos. 3) must be cleaned with every displacing of the cliche!



8.9 Positioning of the Print Impression - Longitudinal



- rough adjustment of the plate to the impression point is achieved by pressing the lever (pos. 4); thus, the toothed wheels of the cliche cylinder (pos. 2) and of the form inking roller (pos. 5) are separated and the cliche cylinder can be turned freely (an adjustment of the teeth ≅ 4 mm)

Attention: the print cylinder (pos. 3) must be cleaned with every rough adjustment!

By turning the adjusting element (pos. 6) carefully, the print impression can be positioned by 2 mm in longitudinal direction:

- turn the adjusting element to the left (+) → impression moves forward
- turn the adjusting element to the right (–) → impression moves backwards

This fine adjustment of the printing format can be carried out while the machine is working, because it isn't necessary to clean the print cylinder.

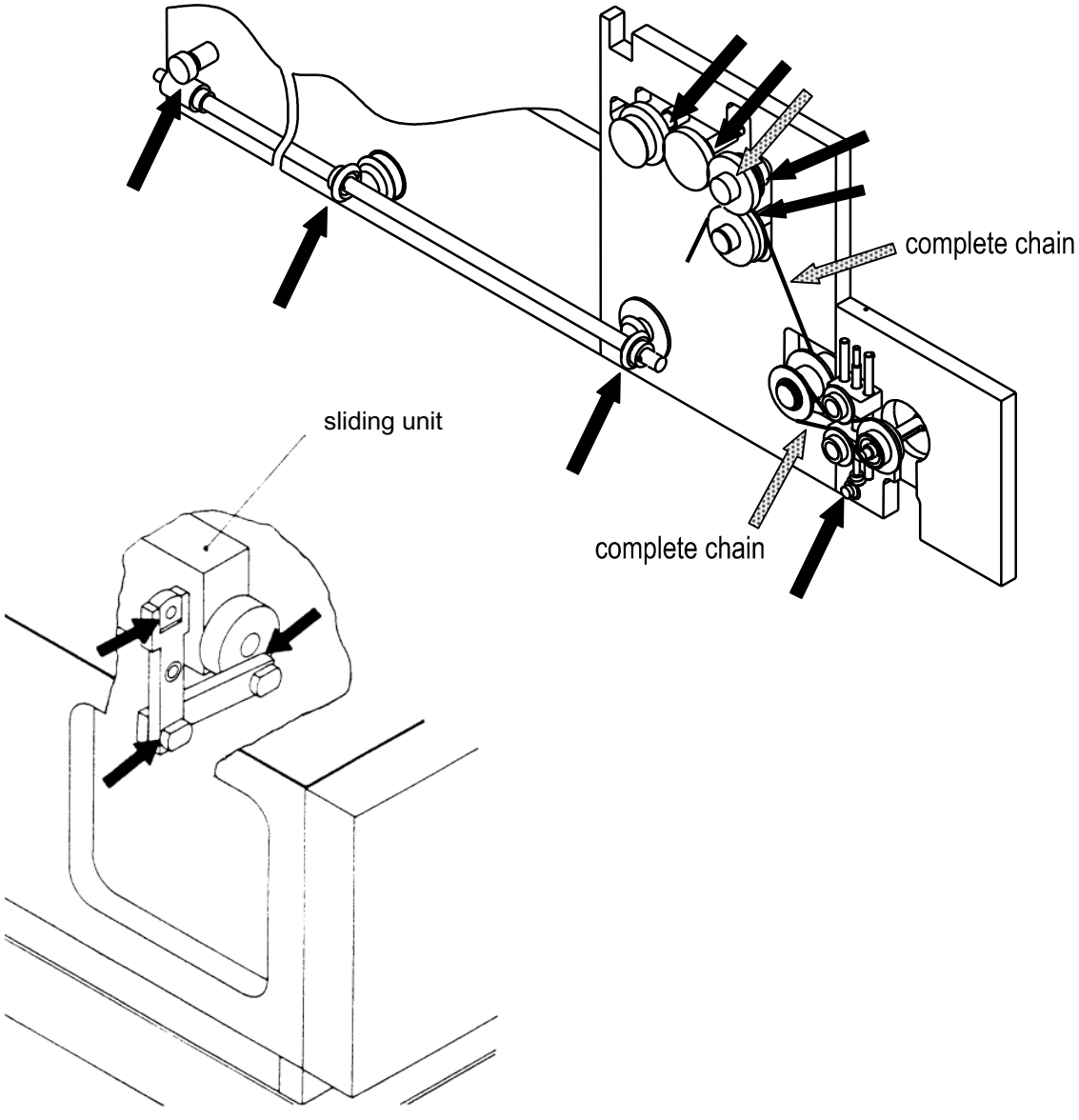
9 Maintenance and Repair

9.1 Grease Lubrication / Oil Lubrication

= Grease lubrication ca. ½ – a year

= Oil lubrication ca. ¼ – a year

Recommended Lubrication Stuff:



toothed wheels: AGIP TOP 2000 Longtime– grease

chain: chain inside bearing Chesteron greasing 60l

Attention: The rubber rollers must not get in touch with oil or fat!

9.2 Cleaning the machine

9.2.1 General

Important: The printing quality is strongly influenced by the condition of printer and printing accessories. It is therefore important that especially those parts of the equipment which get in contact with printing ink are regularly cleaned.

For cleaning of cliche cylinder and rubber rollers the corresponding thinner in connection to the printing colour may be used.

Please draw your attention to the supplier details, in doubt either contact the colour supplier directly, or our Service-Hotline (0931 / 9085-0).

Attention: Please do not use cleaning material based on mineral oil basis like petroleum or benzine. The use of applicable cleaner may destroy plastic materials.

For cleaning of all other machinery parts we recommend to use our active-cleaner order-no.: HI001004

After each printing process, the print cylinder and the cliche should be free from printing residual. Moreover, the ink chamber must be cleaned regular.

9.2.2 Print cylinders

In order to be able to clean the print cylinders, the complete magazine can be moved sideways. The settings for a folded cardboard box are maintained.

➢ Pull the lock pin of the magazine upwards

➢ Turn the crank of the magazine slide clockwise to the limit stop

☑ The print cylinders are accessible.

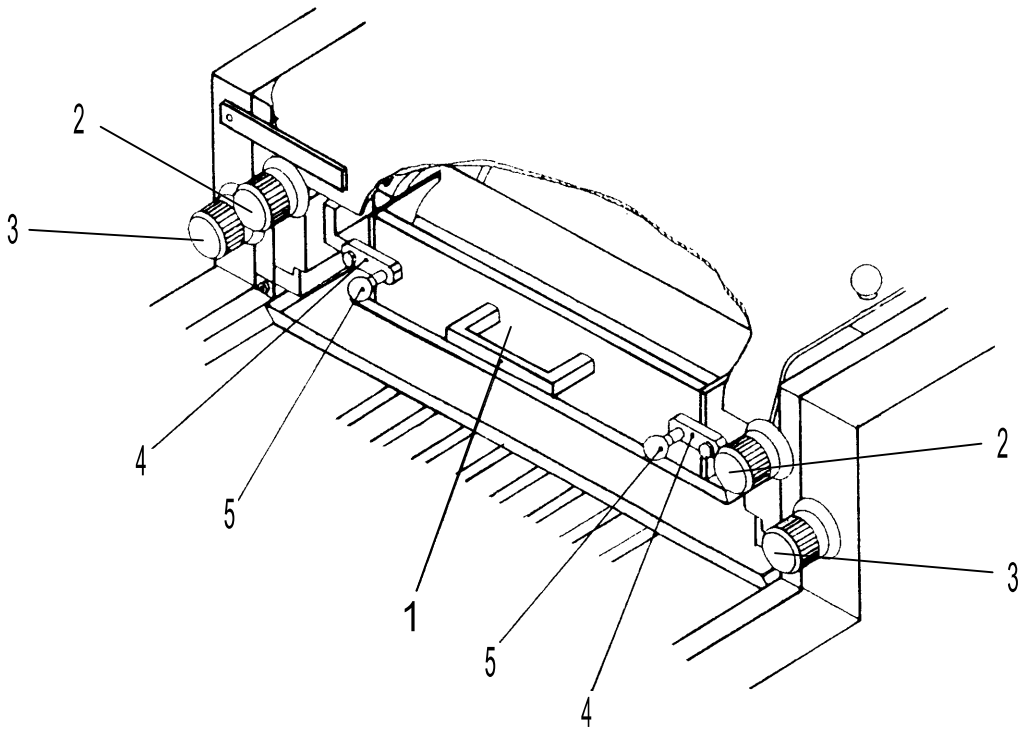
9.2.3 Cleaning of ink unit

Is the machine switched off (stand-by) adjust ink-unit back into basic position respectively move it away from the cliche cylinder by means of the adjustment knobs.(pos.3).

Remove ink unit with a spatula from the doctor blade chamber (pos.1). Please make sure not to damage the screen roller. Always work into direction of the rollers when taking out the ink, so eventually dripping colour will be transported back into the doctor blade chamber by the rotating screen rollers.

Turn off machine, release clamping screws (pos.5) and fold up holding devices (pos.4) out of the way. Take out and clean doctor blade chamber.

Move form inking roller away from the screen roller by means of the adjustment knob (pos.2). For cleaning purposes screen and form inking roller can be turned by hand now (only in one direction due to free-wheel bearing).



9.3 Roller and Cylinder exchange

The specific rollers resp. cylinders can be exchanged as follows:

- achieve a good access position by altering the adjusting elements
- if necessary, remove finger guard (pos.1)
- loosen the 4 hexagonal socket head screws on the specific roller resp. cylinder(pos.2)
- lift roller resp. cylinder on the right out of the bearing and pull it to the right out of the clutch
- to insert the roller resp. cylinder again, conduct the above process in reverse order

9.4 Blade Replacement

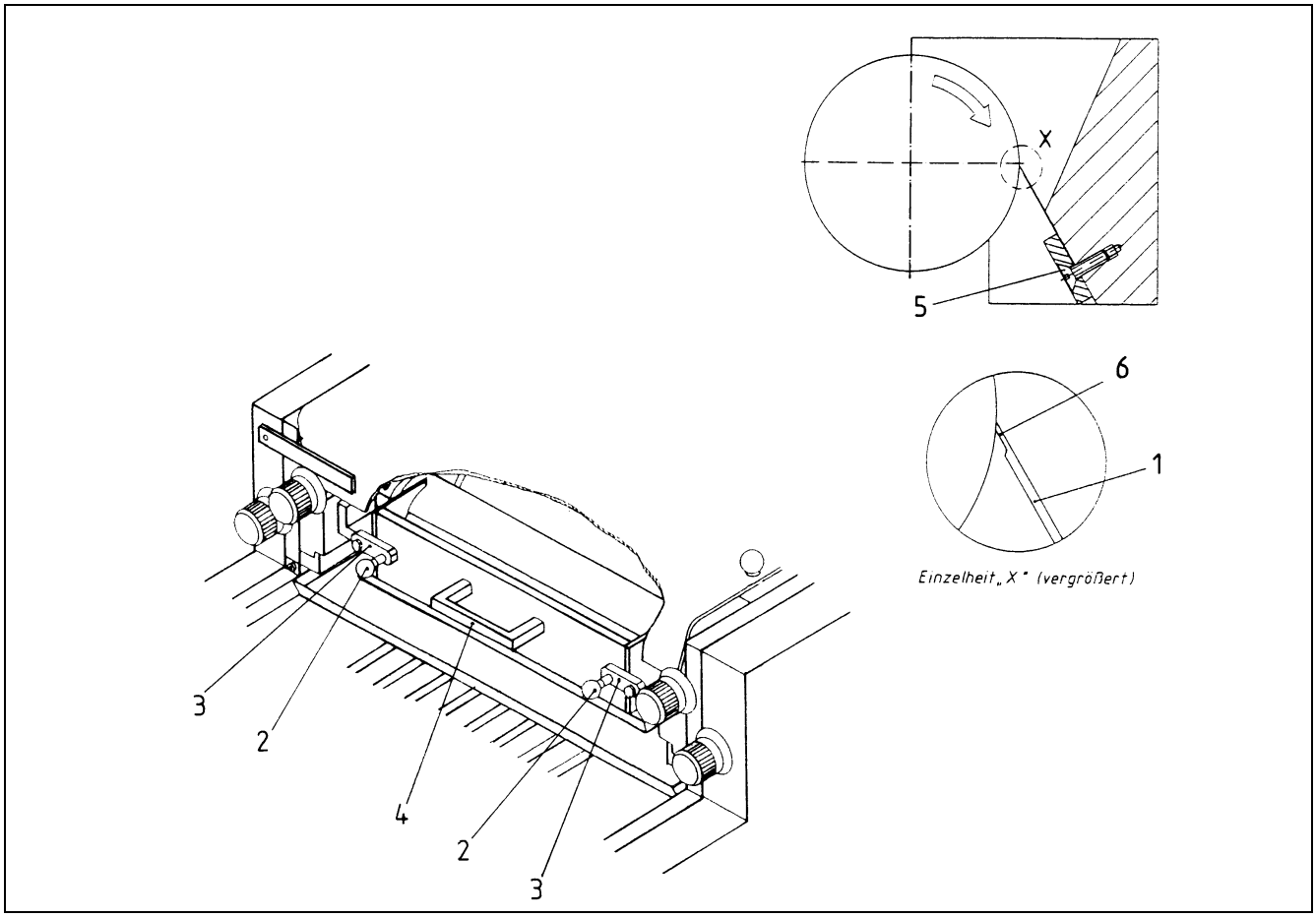


Illustration 3: Blade Replacement

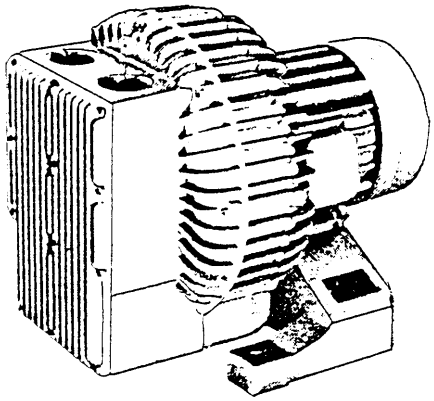
If necessary, replace the blade plate (pos. 1) as follows:

- Loosen the two pressing screws (pos. 2).
- Swing off the two pressing straps (pos. 3).
- Remove the blade chamber (pos. 4) by its grip.
- Loosen the four mounting screws (pos. 5).
- Replace the blade chamber (pos. 1), making sure that the blade plate chamfer (pos. 6) is placed correctly.
- First tighten the outer screws, then the inner screws.

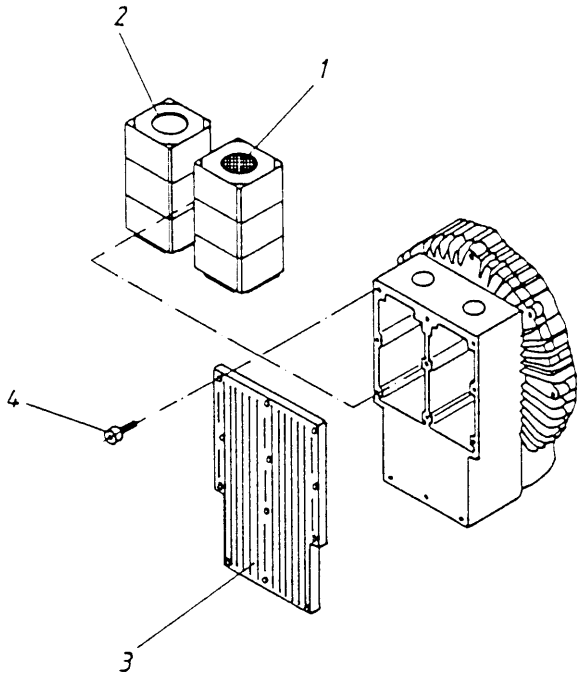
After you have replaced the blade plate as prescribed, repeat the procedure described above in reverse order.

Caution: If the blade chamber is pressed onto the screen roller too tightly by the pressing screws (pos. 2), the complete screen roller drive may stop running.

9.5 Exchange filter – vacuum pump (Option)



In case of malfunction of the vacuum pump change the filters (sound absorber) as follows:



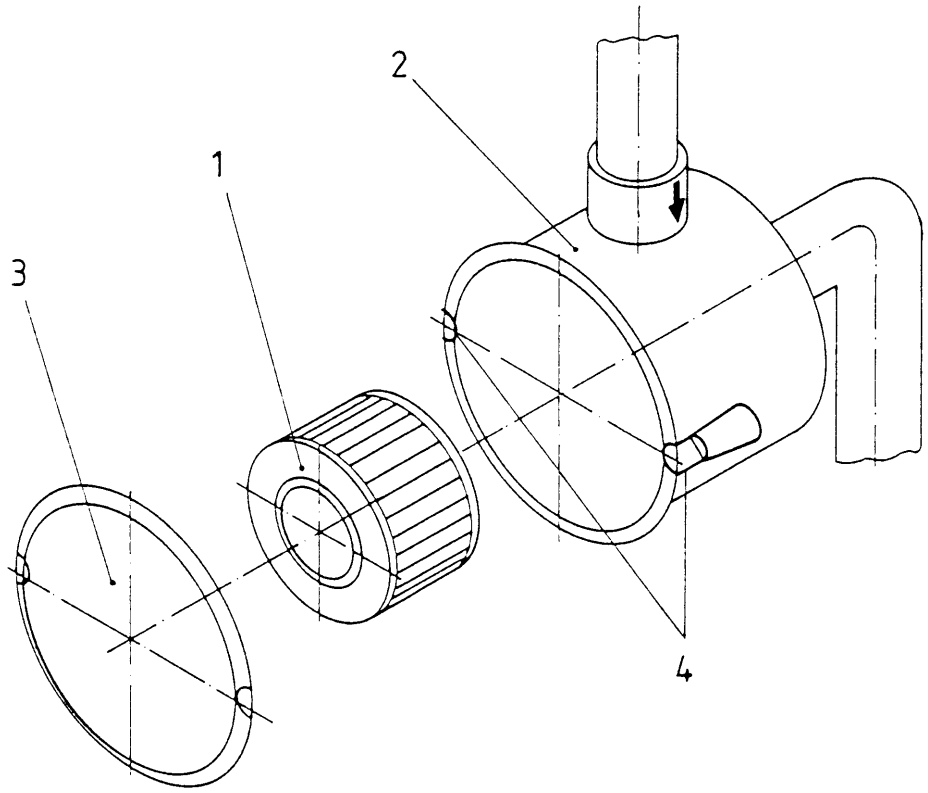
- loosen all socket head cap screws (pos. 4) at the cover (pos. 3)
- take out the cover (pos. 3) and remove both filters (pos. 1 and 2)
- insert new filters and mount them in reverse order

Spare part orders:

Pos.	Designation	Order–No.
	Vacuum pump	AEP30001
1	Filter	AEP3Z101
2	Filter	AEP3Z102

9.6 Filter exchange, Additional filter – Vacuum pump (Option)

In case of malfunction of the vacuum singularisation (pos. 1) change the additional filter as follows:



- open both of the tension brackets (pos. 4) at the cover (pos. 3) of the filter
- take out the cover (pos. 3) and remove the filter cartridge (pos. 1)
- insert new or cleaned filter cartridge and mount them in reverse order

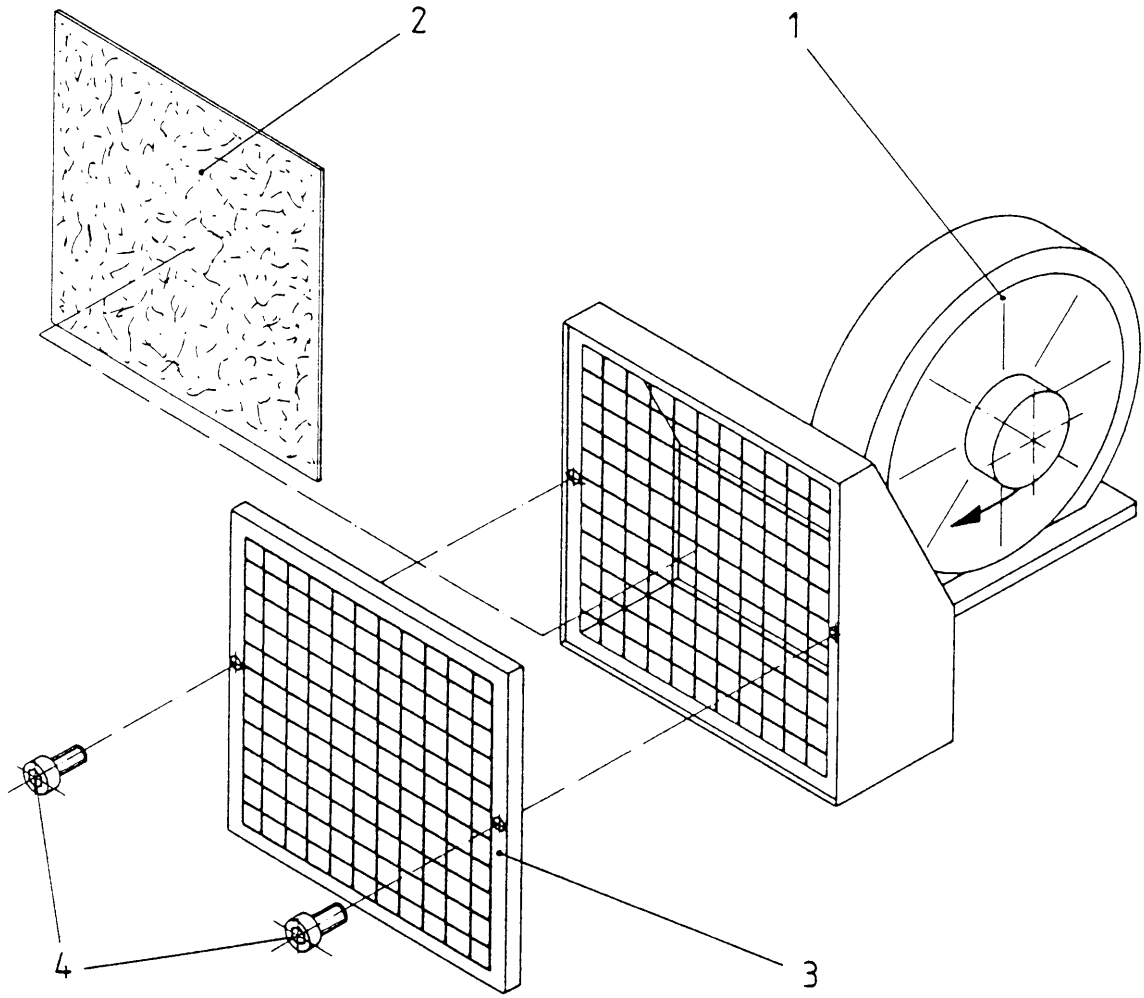
spare part orders:

Pos.	designation	order–No.
1	filter cartridge	PWF03Z01
2	filter	PWF03001

9.7 Filter exchange – Suction (Option) 2000 Watt UV-dryer

The activated carbon filter of the exhaust should be changed half yearly !!

The filter must be changed permature, when there is much of a dirt accumulation.



- loosen all socket head cap screws (pos. 4) at the clamping frame (pos. 3)
- take out the clamping frame (pos. 3) and remove the filter material (pos. 2) .
- insert new filter material and mount them in reverse order

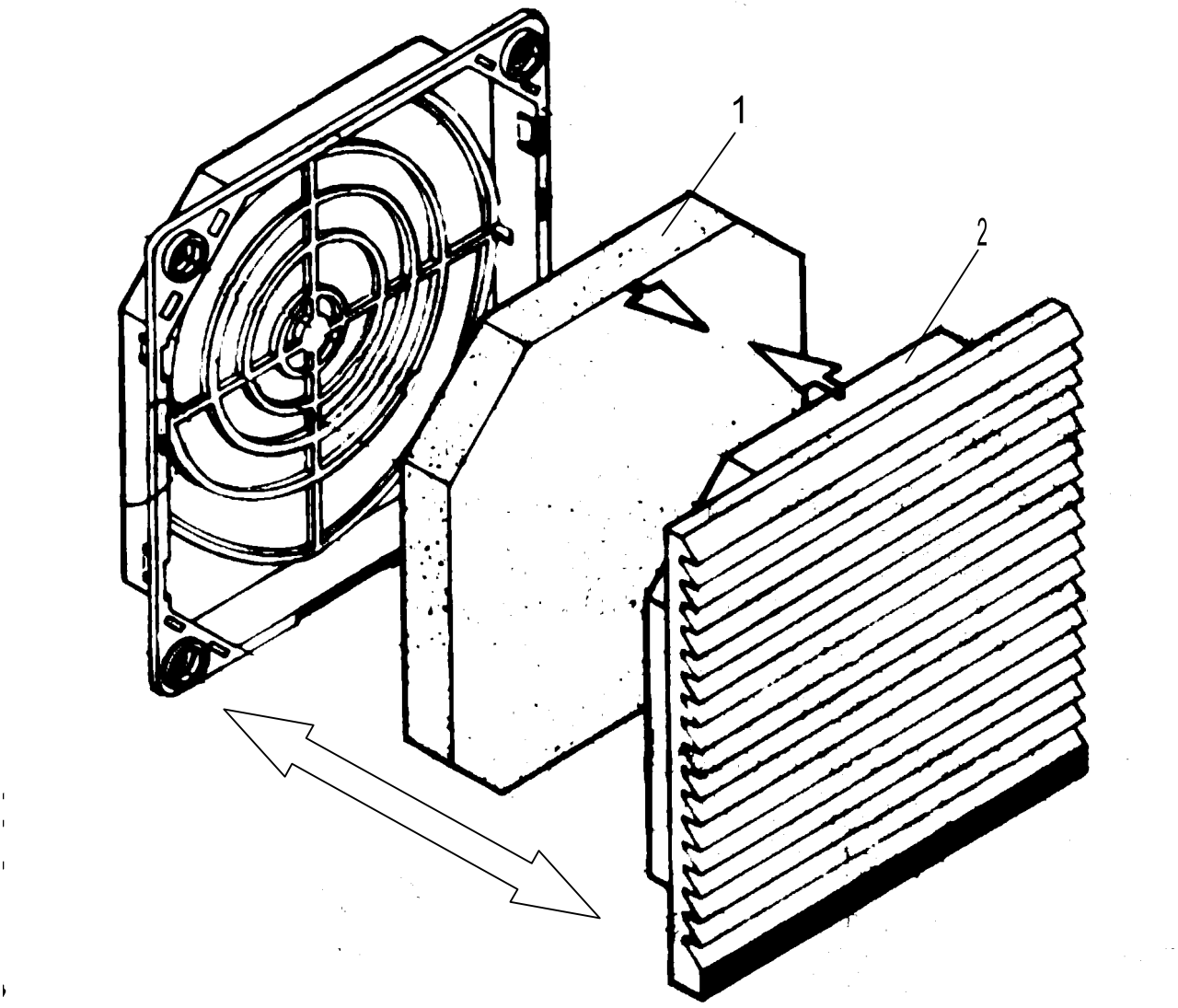
spare part orders:

Pos.	designation	order–no.
1	ventilator	KU5G0101
2	filter material	EN080066

9.8 Clean Airfilter of the Switch cabinet

The filter material (pos.1) of the switch cabinet filter blowers must be cleaned **once a year,** or even more frequently if the environment is particularly dusty and/or dirty.
To clean the filter material, remove the outer blower covering (pos. 2) and take out the filter mat (pos. 1).

- washing out in water (not more than 40°C), eventually in addition with fine washing agent, wich is customary in the trade
- **also possible:** cleaning by beating, sucking off or blowing out with compressed air
- in case of fatty dusts:
  washing out in petrol or warm in addition with fat dissolver agent.
- wringing out must be avoided!



- filter material 1 x. order-no.:KU50Z211

9.9 Replacing the Buffer Battery of the PLC

- Annual replacement.
- In case of a supply voltage failure or upon switchoff of the S5–95U PLC, the contents of the internal memory are preserved (remanently) only if a buffer battery is installed.

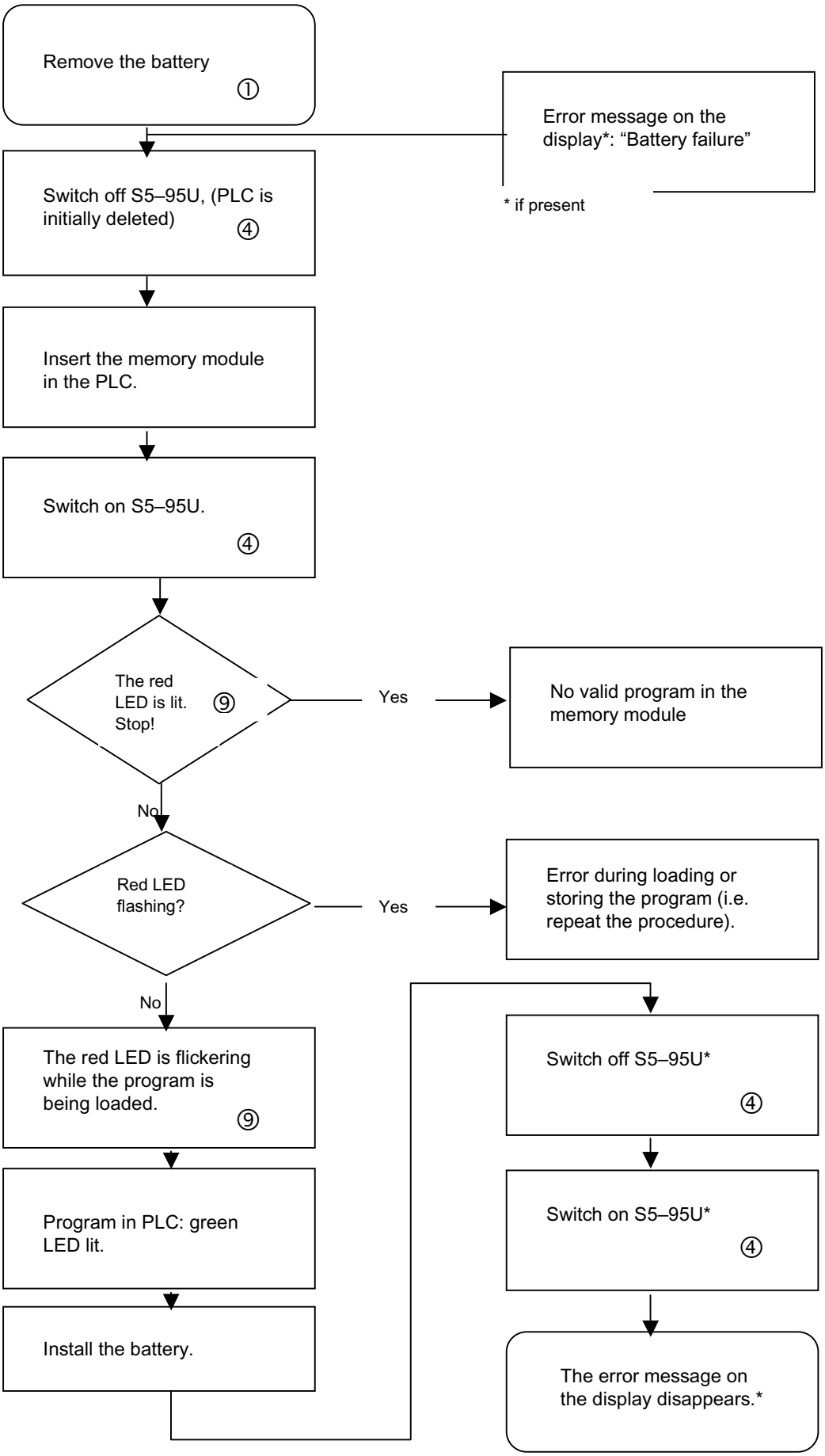
Note

- Only install and replace a battery if the PLC is switched on. If you fail to observe this requirement, it is absolutely necessary that you perform an **"INITIAL DELETION"** after you have switched the machine on and then reload the program from the supplied EPROM.
- The warranted buffer time of a new lithium battery in the PLC is at least one year.
- Any battery failure is indicated by the yellow LED on the operating panel of the operating device.

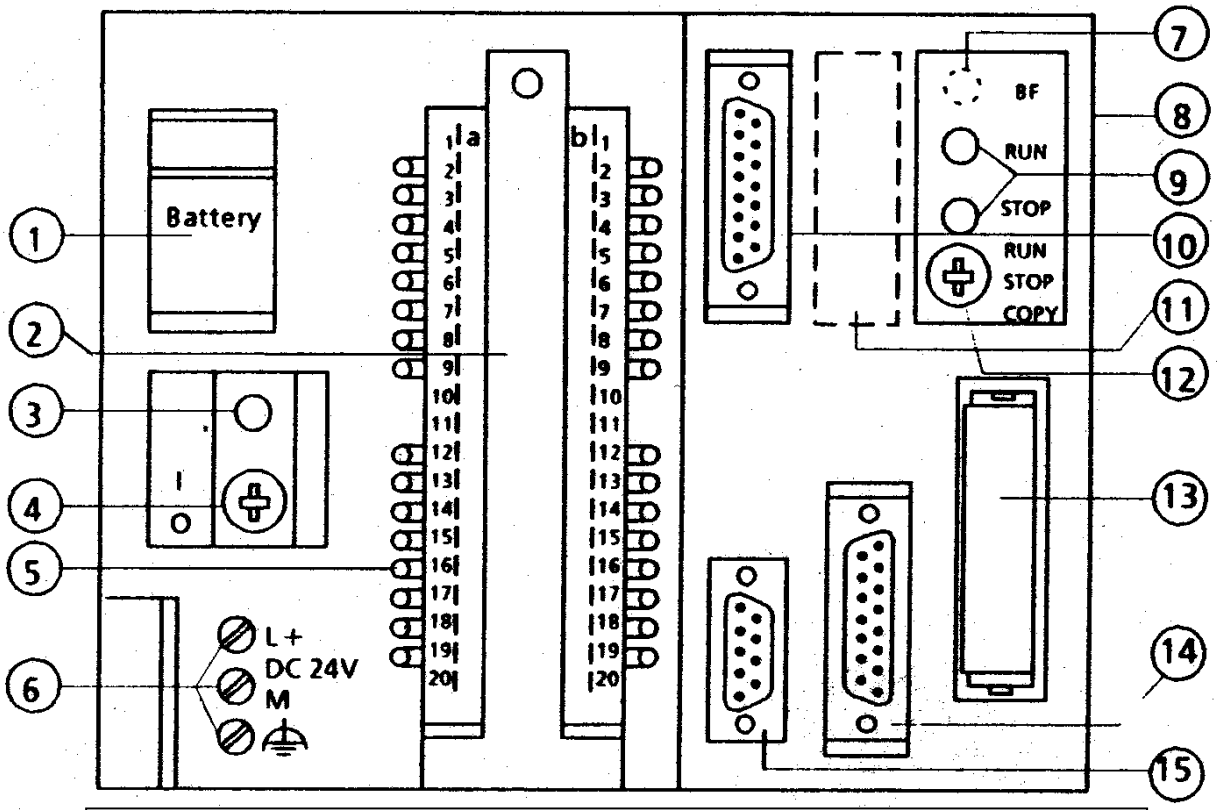
Caution! Do not charge lithium batteries! Explosion hazard!

Used-up batteries must be disposed of as hazardous waste !!

9.9.1 Loading the Program Automatically



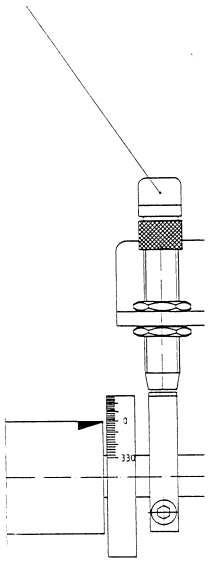
Display and Operating Elements



Pos.	Description
1	Battery compartment
2	Front connectors for digital inputs (E 32.0.... E 33.7) and front connectors for digital outputs (A 32.0...A 33.7)
3	Battery low signal
4	ON/OFF switch
5	LED indicator for digial inputs and outputs
6	Terminals for power supply
7	In case of S5–95U with SINEC L2-/SINEC L1-DP interface: BF-LED
8	Connector for S5-100U assemblies
9	Mode indicator: green LED = RUN, red LED = STOP
10	Interface for analog inputs (EW 40... EW 54) and interface for analog outputs (AW 40)
11	In case of S5-95U, order no. 6ES5 095-8MB.. SINEC L2 interface In case of S5-95U, order no. 6ES5 095-8MC.. 2nd serial interface In case of S5-95U, order no. 6ES5 095-8MD.. SINEC L2-DP interface
12	Mode selector switch
13	Compartment for memory module: E(E)PROM
14	Interface for PG, PC, OP, or SINEC L1 bus
15	Interface for alarm inputs (E34.0...34.3) and interface for counter inputs (EW 36, EW 38)

9.10 Adjustment Instructions for the Initiator Shaft

11 B 65.0



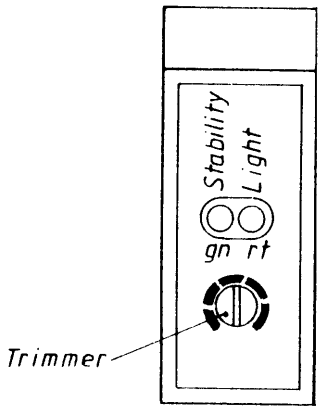
1. Turn the print image fine adjustor (see: print image positioning in longitudinal direction) in anti-clockwise direction until it stops.

	Initiator no.	**Position of the initiator shaft in degrees**			**Machine function**
		0°			Rear singularization slide
2.	Adjustment:	90°			Front central singularization slide
		180°			Front singularization slide
		270°			Rear central singularization slide
3.	11B65.0	On	85°		Counter-pressure cylinder closed / open
		Off	175°		Separator coupling off

9.11 Setting the Sensitivity of the Light Barrier Amplifier

Set the trimmer such that the green LED is emitting steady light.

The red lamp emits light if light is reflected or as long as the light ray is not interrupted.



9.12 UV–dryer 2000 Watt

9.12.1 General

After switching on the printing units, the UV dryer needs a warm-up time of about 2 minutes to full performance.

Dusty air and air containing solvents as well as paint must have a negative effect on lamp performance. They can burn in on the surface of the reflectors and the lamp and build up a layer impervious to UV radiation.

The UV dryers should be regularly cleaned using alcohol or spirits. Particles not yet burned in can be removed by this.

Attention:	Do not touch the glass bulb of the UV lamp with **bare hands**! Otherwise, absolutely clean glass before start the operations using cloths soaked with alcohol.

Remarks:

- **Ignition process:**

  New Start, cold lamp:

  The lamp current rises to a maximum, the partitioning closes and the ventilator stops. The lamp quickly heats up and is heated to operating temperature. When this is reached, full power as during heating-up period is sustained for another about 15 seconds to stabilize the temperature. But the partitioning may be controlled by (external) machine contactor from the moment of readyness for operation. After the 15 seconds, according to individual need, the lamp power is controlled by the SPS in two stages.

- **Restart:**

  The lamp is hot or still hot. The plasma is not yet ready to ignite:

  When switching on, the partitioning opens and the cooling ventilator begins to run to cool the lamp, which has not yet ignited. When the lamp is cold enough, it automatically ignites. Depending on aging of the UV lamp, this ignition process may take longer (plasma has sufficient conductivity). Then, the starting process begins as above.

- **partitioning function:**

  If at the time of opening of the partitioning the limit switch „open“ respectively at closing the limit switch „closed“ not be operation, then the partitioning motor adjusts partitioning every 12 seconds, until the limit switch is operated (pulse operation, because ambient temperature $>$ 80°C).

  The partitioning motor stops immediately after operation of the respective limit switch.

  Control at the UV dryer controller card within the electrical control cabinet:

  LED (V52) lights up if partitioning is "open" and LED (V54) lights up, if partitioning is "closed". If the limit switches are not activated after a period of about 5 sec. after the command **partitioning "open" or "closed"**, then the control detects a fault.

9.12.2 Exchange of Lamp

Attention: Do not touch the lamp or reflector with naked hands or cloth with acid content or oily cloth.

Avoid looking into the lamp respectively ambient light with unprotected eyes.

Loss of eyesight possible !

Burn hazard: Exchange the UV lamp only in cold condition respectively after sufficient cooling-off time !!

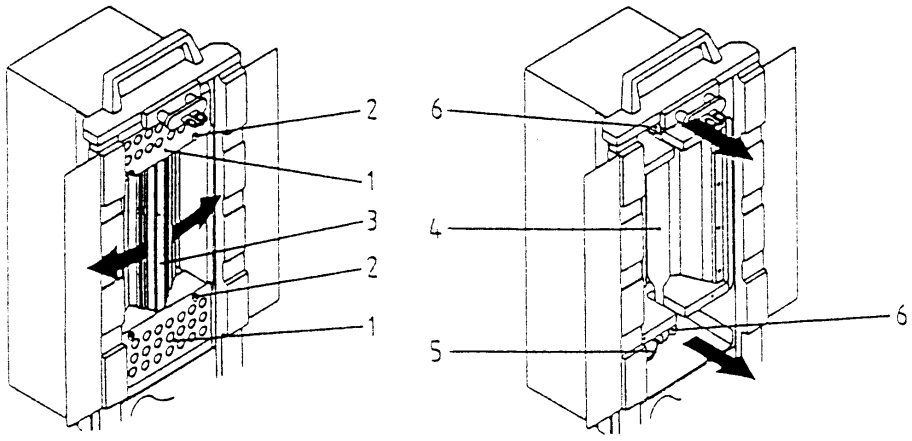
High voltage: Always set the main switch to „OFF“..

The UV lamp is to be exchanged only by qualified personnel as follows, if need arises.

- Before the exchange, set the main switch on the switching cabinet to „OFF“.
- Swing up the UV dryer to the stop using the handle.
- Take off the protective plates (pos.1) after loosening the screws (pos.2), and carefully open the reflectors (pos.3).
- Pull out the connectors (pos.5) and exchange the UV lamp by lightly pulling apart the holding clamps(pos.6).

Remark: Use only original spare parts. The METRONIC lamps are specially made and carefully selected and electrical control is adjusted to their values!

- After each exchange of lamps, the choking coil setting of the associated UV drier should be checked respectively readjusted.



- Assembly in reverse order.

9.12.3 Adjustment of the UV Drier Lamp Current

After each exchange of lamps, the choking coil setting of the associated UV drier should be checked respectively readjusted. The choking coils can be found within the switching cabinet.

The lamp current can be raised up to 120% of nominal power in case of aging respectively abatement of the dryer performance.

In case of too low a current, the lamp is cooled down too much and the control unit switches to fault and full power, until the UV lamp is heated up again.

In case of too high lamp temperature (> 900°C), the lamp glass crystallizes, and the UV dryer monitor switches to fault, the lamp is turned off and the cooling ventilator is switched on.

The lamp voltage is proportional to the lamp temperature; in case of lower lamp voltage, the lamp temperature is also lower.

Check the lamp current of the UV lamp if you are operating the UV lamp for the first time or if there are problems in drying the UV ink.
. Use the nominal values stated below.

Attention! **These measurements and settings may only be made by qualified personnel! In any case, perform measurements before the ignition coil and not on the high voltage side.**

UV lamp nominal values:	Lamp current	
	- base load operation (standby):	4,8 A / ±0,5A
	- 100% load operation	9,7 A / ±0,5A
	Lamp voltage	
	- all operating modes	240V / ±20V

The lamp current may be set by reclamping at the series choke coils according to the following table: (the standard settings are displayed in bold!)

High voltage!!!: Always set the main switch to „OFF“!!

base load - coil L__.1	**100% load - coil** L__.2		
-10%	-10%		
-10%	-5%		
-5%	-5%		increase current/power
-5%	±0%		
±0%	**±0%**	**standard**	
±0%	+5%		
+5%	+5%		decrease current/power
+5%	+10%		
+10%	+10%		

Upon modification of coil wiring, it may be necessary to reset the lamp controller card. Please use the corresponding setting instructions.

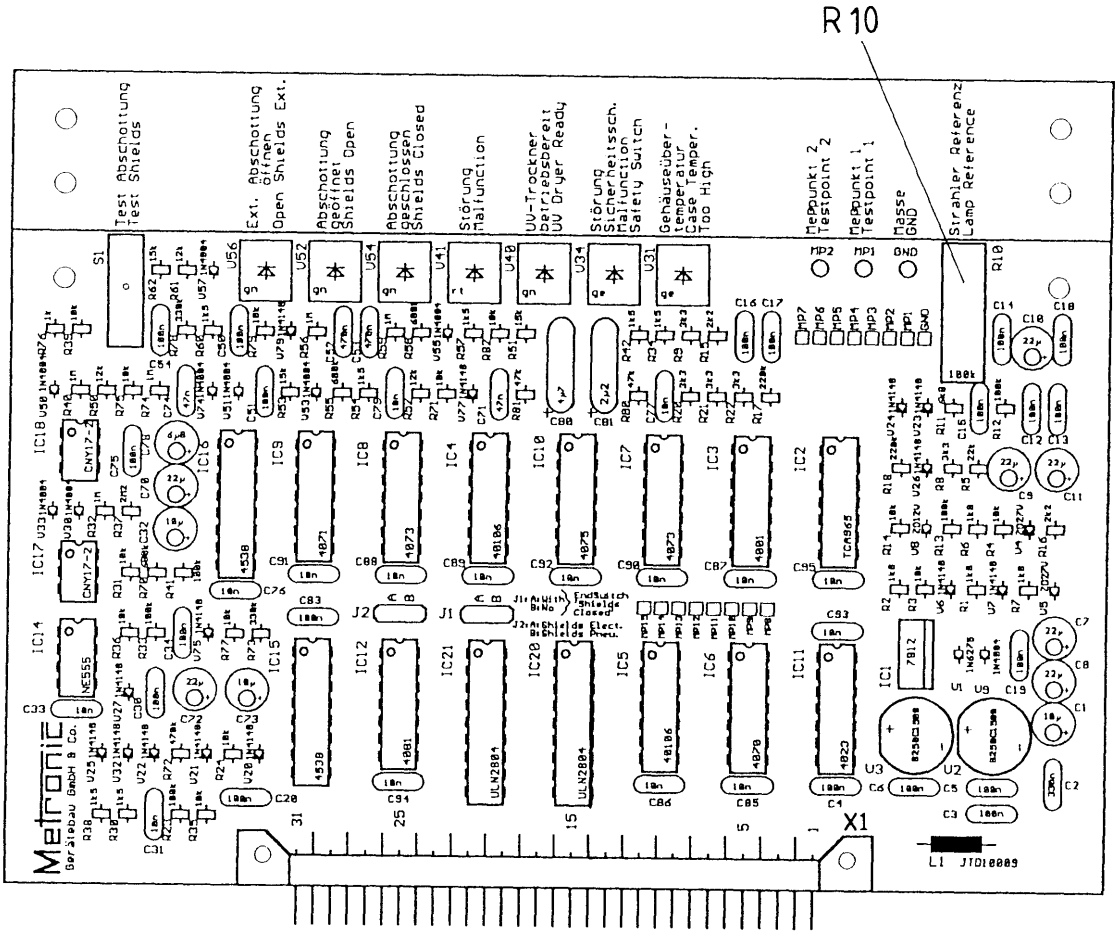
9.12.4 Adjustment of the UV-Dryer Controller Card

This adjustment may only be made by expert personnel.

Connect a direct current meter with a range of 20 V to the GND of the voltage controller with minus pole and plus pole at the measuring point 2 (see component schematic).

Turn on the UV drier :

- In printing operation, select the lowest drier power level.
- After about 5 minutes, read the voltage and record it. Repeat this measurement for the highest power level, whereby the LED´s V6 or V6 + V5 on the circuit board must be lit.
- Form an average from the two voltages.
- Connect the plus pole of the meter to measuring point 1 and adjust the calculated voltage using the spindle trimmer (R10).

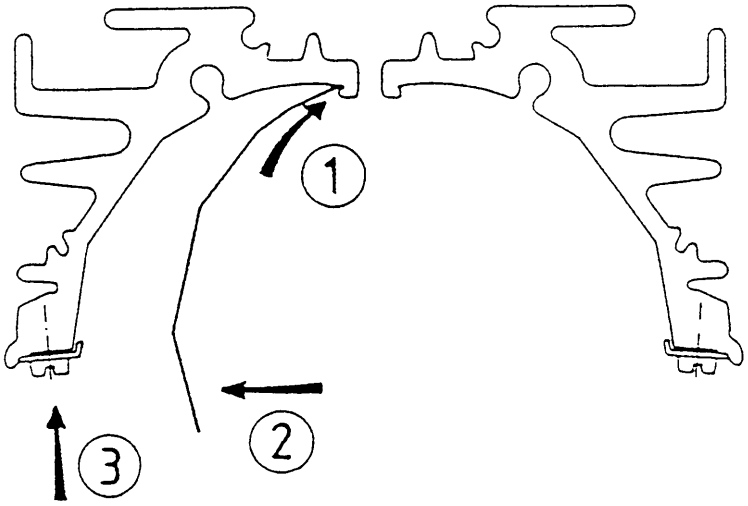


9.12.5 Exchange of Reflector

Attention:	Only exchange the reflector plates in cold condition respectively after sufficient cooling down period! **– Burn hazard !** **working on UV-dryer :** **always set the main switch to „OFF“!!**

Please effect exchange of reflector plates in the following order :

- Loosen the screws (pos.3) at the right and left edge of the reflector and remove the holding angles. Take out the old reflector plates.
- On the two longitudinal sides of the new reflector plates, lift up the protective film to a width of about 5 mm.
- First insert the reflector plates into the groove (pos.1) behind the lamp and fit into the inside wall of the reflector (pos.2).
- Fasten the reflector plate with the holding angles and screws (pos.3) as follows.
- Tighten the screws from left to right, in two passes, so that the reflector plate is pressed well into the reflector, to have as large a contact zone as possible between the reflector and reflector plate for heat input. This ensures creation of as wide a contact zone for heat transfer between reflector plate and reflector as possible.

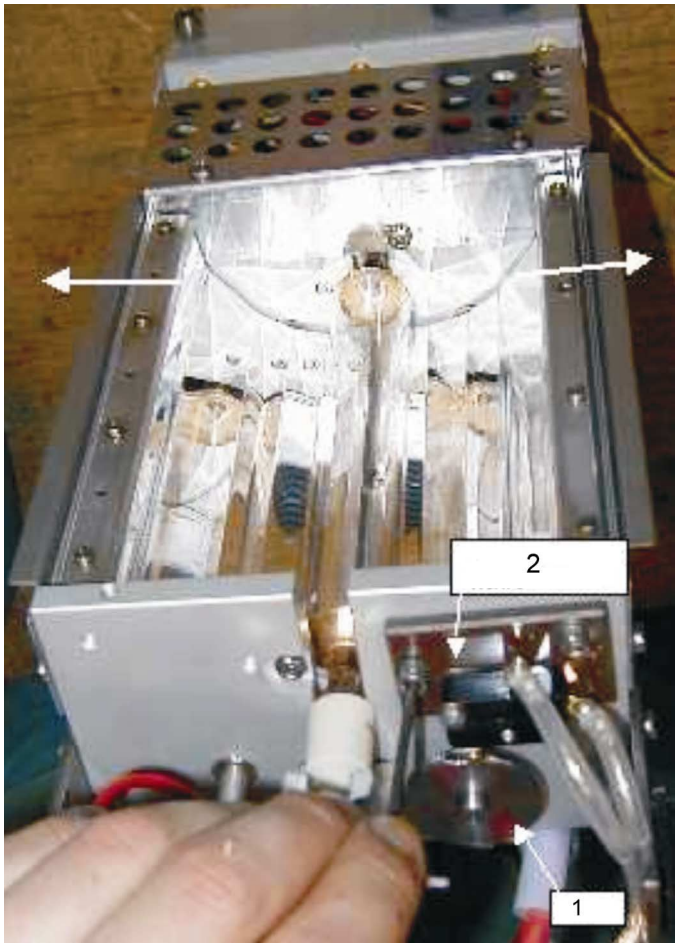


9.13 Adjusting the UV dryer cam (EW3400043)

9.13.1 Removing the UV dryer unit

- ➢ Switch off machine.
- ➢ Let UV dryer cool.
- ➢ Unplug UV dryer (only ocPRINT V06: in the module).
- ➢ Open UV dryer:
  - Close shield by hand if it is open.
  - Do not touch lamp.
- ➢ Pull orange plug from hinged switch (only ocPRINT).
- ➢ Unscrew housing screws.
  - ➢ Four screws M4 with rosettes must be unscrewed.
- ➢ Remove UV dryer unit carefully from housing.
- ➢ Unplug PE line.

9.13.2 Removing the UV dryer cam

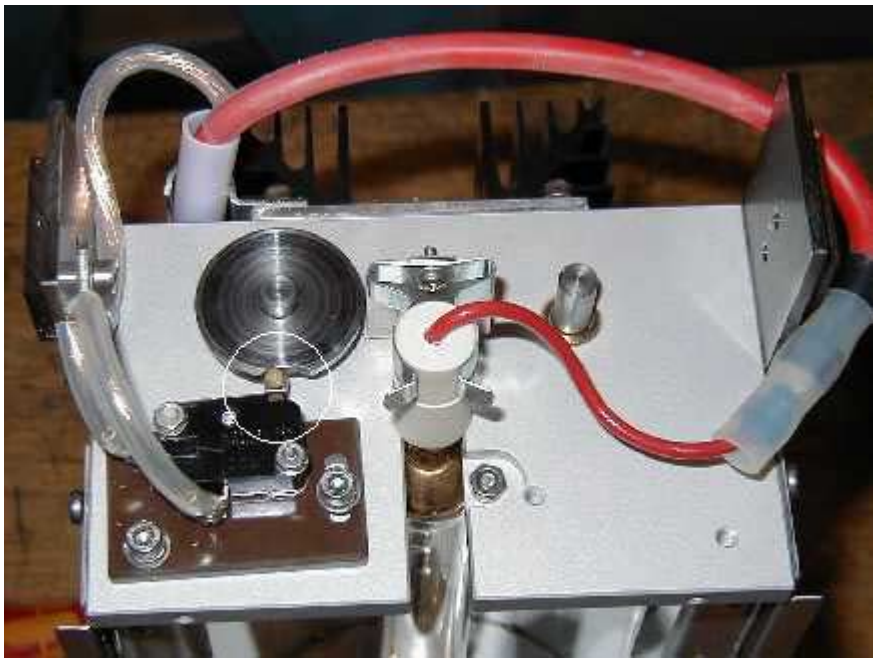


- ➢ Open shield until it strikes against stop.
- ➢ Loosen Pertinax plate with micro-switch (2).
- ➢ Remove old cam (1).

9.13.3 Installing the UV dryer cam

➢ Slide new cam on shaft.

■ Notice: The roller of the micro-switch must be adjacent to the lead of the depression. The lever of the switch must not be activated. The roller only touches the cam disc.

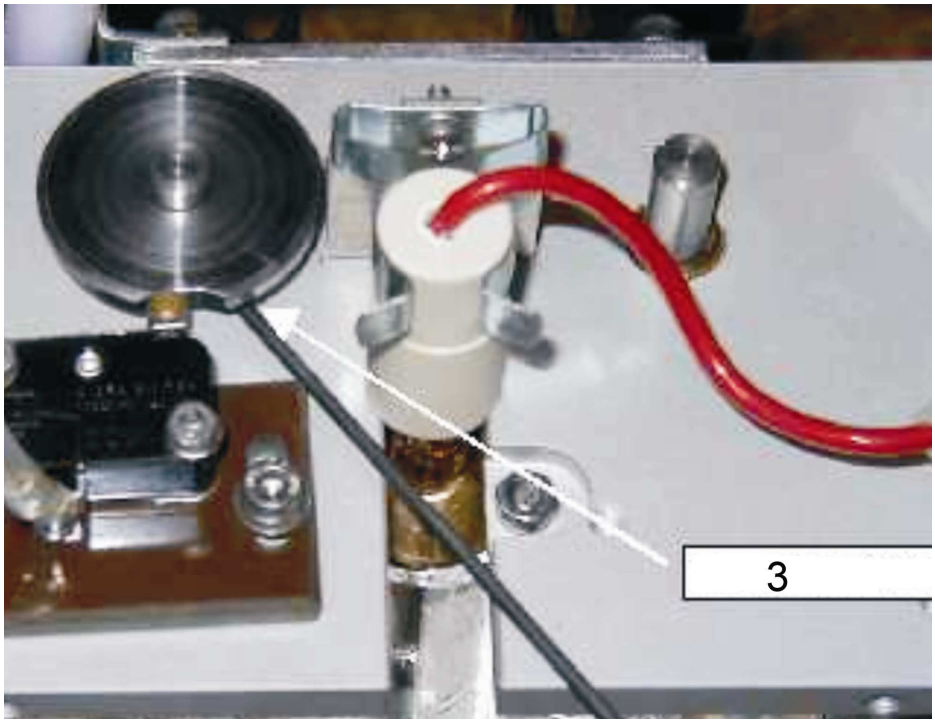


➢ Fix cam disc with stud screw; use screw locking device.

➢ Secure screw with heat resistant adhesive (e.g. Loctite).

➢ Fix micro-switch.

Notice: The shield must still be open so that it strikes against the stop.



9.13.4 Functional test

➢ Close shield by hand.

☑ The clicking of the switch „Shield closed“ can be heard.

➢ Open shield again.

☑ The clicking of the switch „Shield open“ must be heard just before it strikes against the stop (max. 5 mm).

■ If you do not hear the switch „Shield open“ click, the cam must be turned accordingly. Proceed as described under „Installing the UV dryer cam“.

9.13.5 Installation in UV dryer housing

■ The installation of the UV dryer unit in the UV dryer housing is done in reversed order as the removal.

Notice: Shield should be closed

➢ Connect PE line to housing.

9.14 UV–Dryer 3000 Watt

9.14.1 General

After switching on the printing units, the UV dryer needs a warm-up time of about 2 minutes to full performance.

Dusty air and air containing solvents as well as paint must have a negative effect on lamp performance. They can burn in on the surface of the reflectors and the lamp and build up a layer impervious to UV radiation.

The UV dryers should be regularly cleaned using alcohol or spirits. Particles not yet burned in can be removed by this.

Attention:	Do not touch the glass bulb of the UV lamp with **bare hands**! Do not touch the glass bulb of the UV lamp with **bare hands**! Otherwise, absolutely clean glass before start the operations using cloths soaked with alcohol.

Remarks:

- **Ignition process:**

  New Start, cold lamp:

  The lamp current rises to a maximum, the partitioning closes and the ventilator stops. The lamp quickly heats up and is heated to operating temperature. When this is reached, full power as during heating-up period is sustained for another about 15 seconds to stabilize the temperature. But the partitioning may be controlled by (external) machine contactor from the moment of readyness for operation. After the 15 seconds, according to individual need, the lamp power is controlled by the SPS in two stages.

- **Restart:**

  The lamp is hot or still hot. The plasma is not yet ready to ignite:

  When switching on, the partitioning opens and the cooling ventilator begins to run to cool the lamp, which has not yet ignited. When the lamp is cold enough, it automatically ignites. Depending on aging of the UV lamp, this ignition process may take longer (plasma has sufficient conductivity). Then, the starting process begins as above.

9.14.2 Exchange of Lamp UV-Dryer 3000 Watt

Attention: Do not touch the lamp or reflector with naked hands or cloth with acid content or oily cloth.

Avoid looking into the lamp respectively ambient light with unprotected eyes..

Loss of eyesight possible !

Burn hazard: Exchange the UV lamp only in cold condition respectively after sufficient cooling-off time !!

High voltage: Always set the main switch to „OFF“..

The UV lamp is to be exchanged , if need arises.

- Loosen the 2 cylinder screws (fig. 1, pos. 1) at the safety housing (fig. 1, pos. 3).
- Remove the safety housing (fig. 1, pos. 3).
- Loosen the 2 coupler plugs (fig. 1, pos. 4) of the lamp current cable and the coupling (fig. 1, pos. 5) of the air tube.
- Loosen the 6 roundhead screws (fig. 1, pos. 2).
- Slowly pull out the lamp housing (fig. 2, pos. 2) out of the dryer housing (fig. 2, pos. 1).

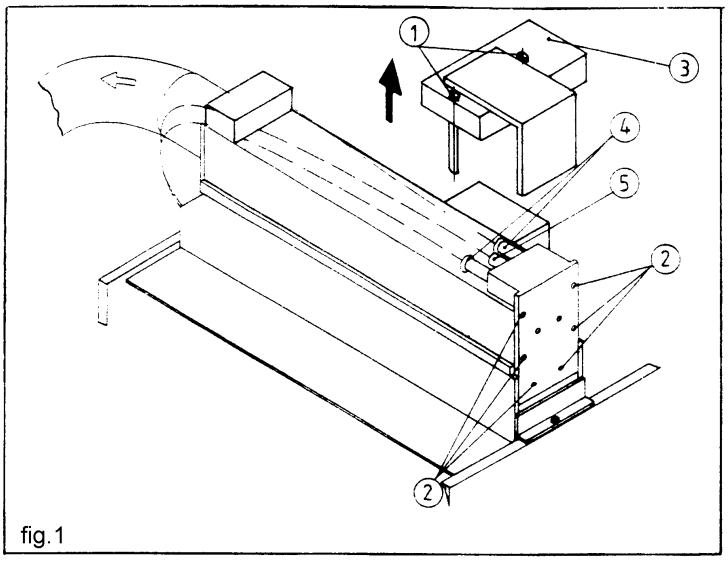


fig.1

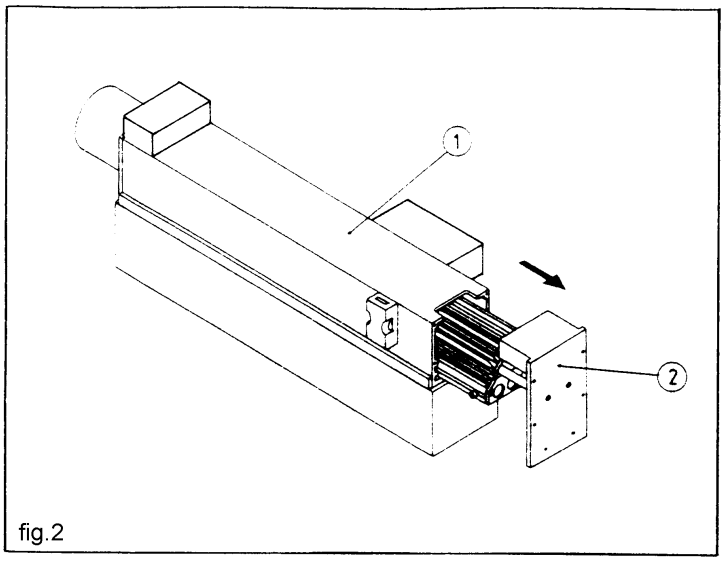


fig.2

Exchange of Lamp UV–Dryer 3000 Watt (Continuation)

- Turn the lamp housing (fig. 3, pos. 1) around.
- Loosen the two nuts (fig. 3, pos. 2) at the glass body (UV lamp).
- Loosen the roundhead screws (fig. 3, pos. 3) from either end plate (fig. 3, pos. 4).

Caution: Since they protect the glass tubes (fig. 3, pos. 5), the end plates may not be removed.

- Slightly press on the end plates including glass tubes (fig. 3, pos. 5) with both hands. Carefully remove and deposit them.
- Remove the UV lamps (fig. 4, pos. 1) and replace them.
- After you have replaced the UV lamps as prescribed, proceed as described above, but in reverse order.

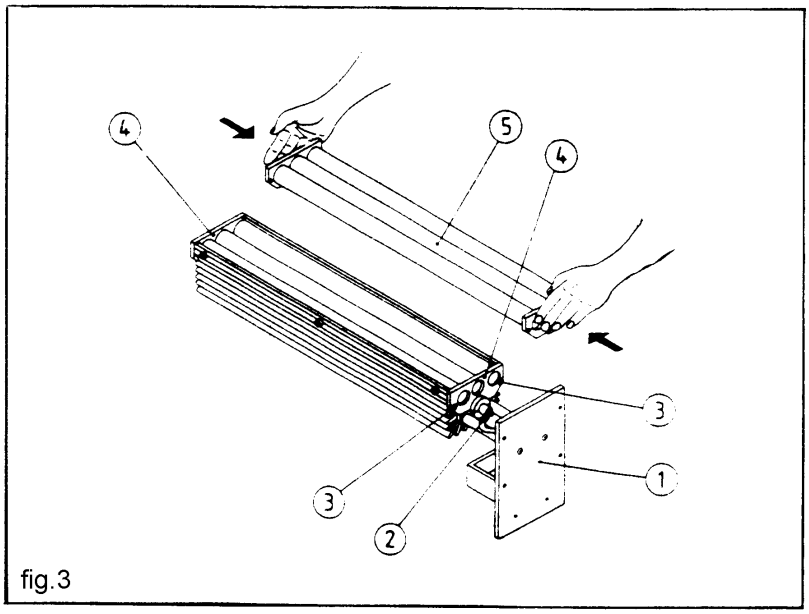


fig.3

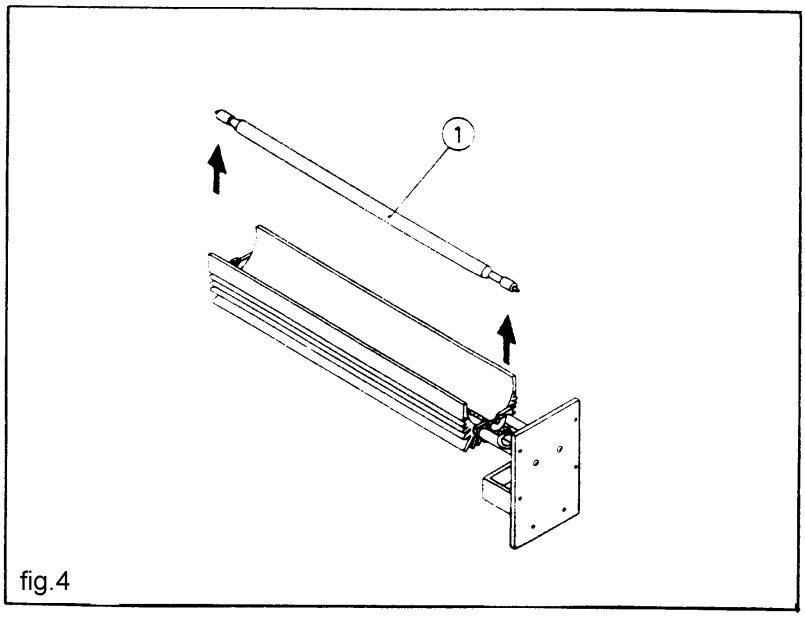


fig.4

9.14.3 Adjustment of the UV Drier Lamp Current (3000 Watt)

UV lamp nominal values:	Lamp current	
	- base load operation (standby):	6,9 A / ±0,6A
	- 70% load operation	11,5A / ±0,9A
	- 100% load operation	15A / ±1A
	Lamp voltage	
	- all operating modes	240V / ±20V

Adjust the lamp current by reconnection of the ballast wiring according to the table below:

- **Attention! These measurements and settings may only be made by qualified personnel! In any case, perform measurements before the ignition coil and not on the high voltage side.**
- **Always set the main switch to „OFF“!!**

(the standard settings are displayed in bold!) Note that a change in the ballast wiring also changes the lamp current by approx. 2.2 A!

Base load coil 1 L_.1	Base load coil 2 L_.2	70% load coil L_.3	100% load coil L_.4	Output with Base load	70%load	100%load	
100%	50%	50%	50%	1500W	2000W	2500W	
100%	50%	100%	50%	1500W	2500W	3000W	
100%	50%	50%	100%	1500W	2000W	3000W	
100%	**50%**	**100%**	**100%**	**1500W**	**2500W**	**3500W**	**Standard**
100%	100%	100%	100%	2000W	3000W	4000W	

Upon modification of coil wiring, it may be necessary to reset the lamp controller card. Please use the corresponding setting instructions.

Note: The 380 V / 400 V / 415 V tappings relate to the supply voltage of the machine. They must always be connected in accordance with the supply voltage applicable at the place of installation!

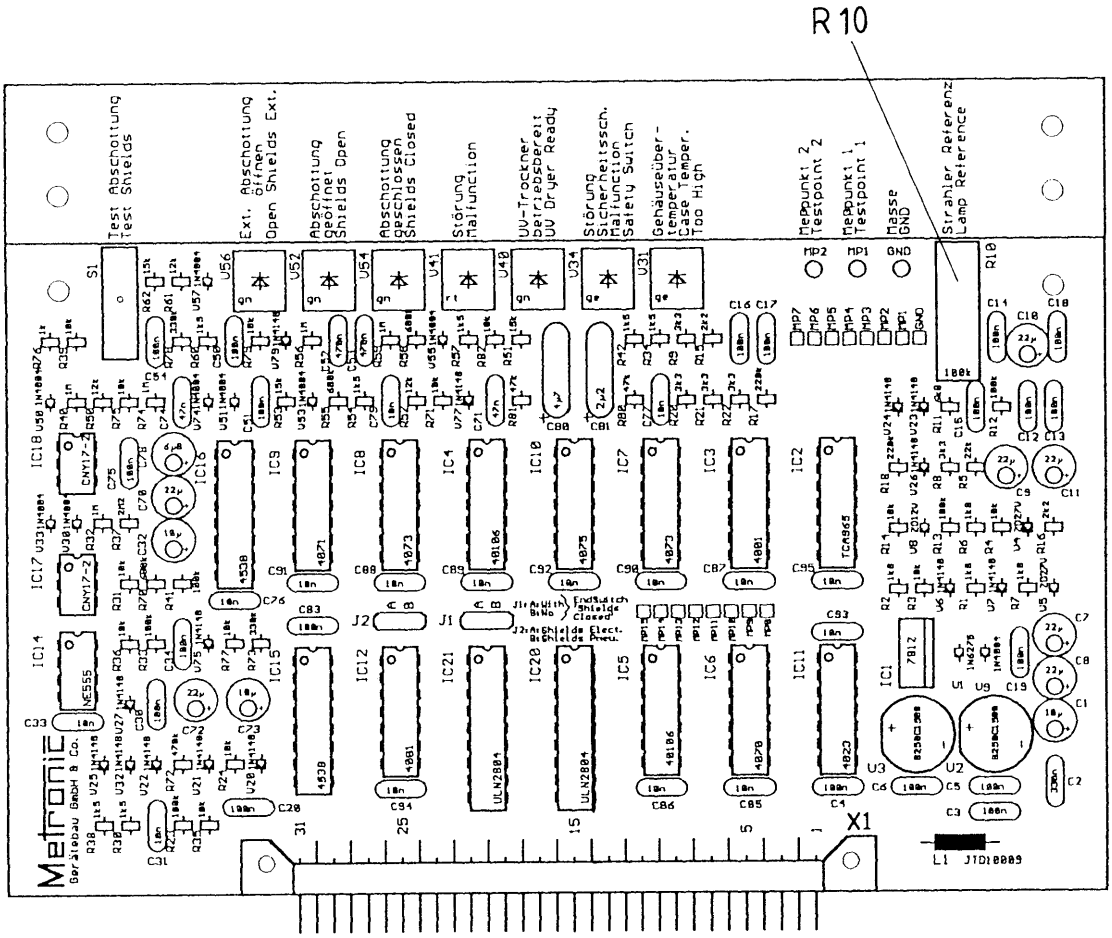
9.14.4 Adjustment of the UV-Dryer Controller Card

This adjustment may only be made by expert personnel.

Connect a direct current meter with a range of 20 V to the GND of the voltage controller with minus pole and plus pole at the measuring point 2 (see component schematic).

Turn on the UV drier :

- In printing operation, select the lowest drier power level.
- After about 5 minutes, read the voltage and record it. Repeat this measurement for the highest power level, whereby the LED´s V6 or V6 + V5 on the circuit board must be lit.
- Form an average from the two voltages.
- Connect the plus pole of the meter to measuring point 1 and adjust the calculated voltage using the spindle trimmer (R10).



9.14.5 Adjusting the Pressure Control Device

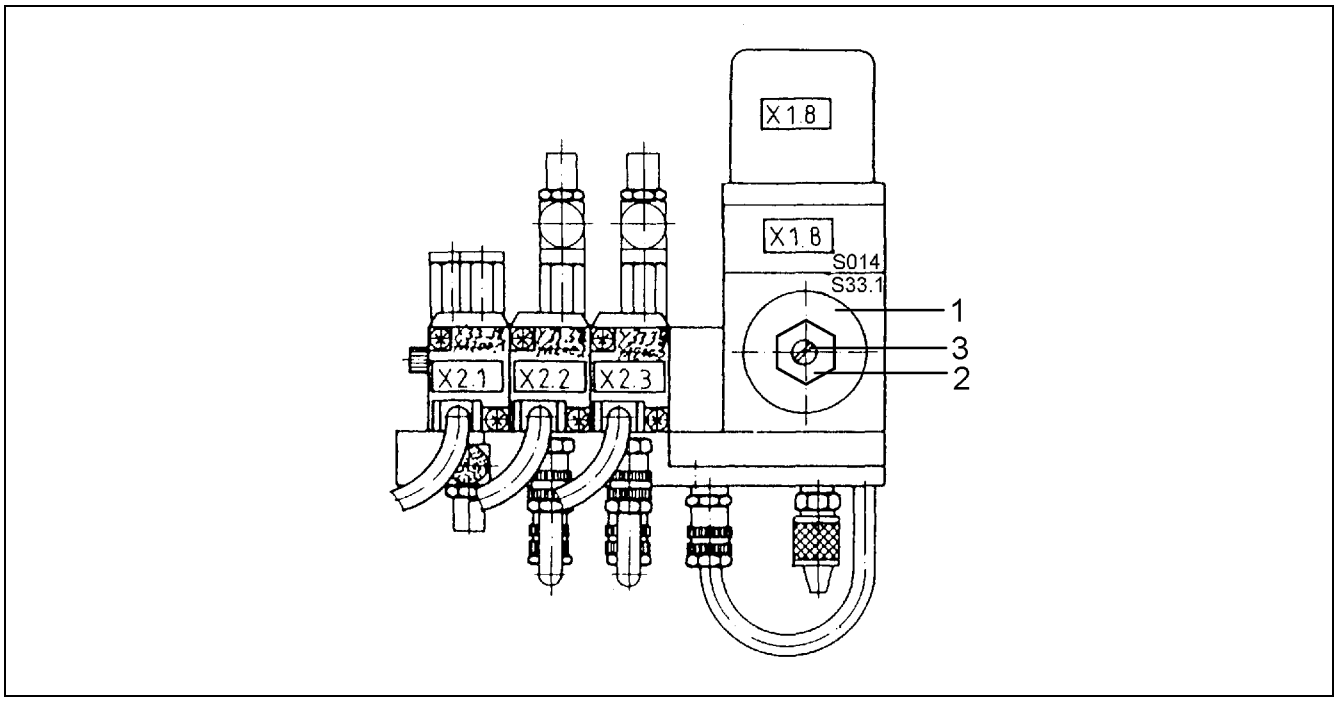


Figure 4: Adjusting the pressure control device

➢ Adjust the control valve of the maintenance unit to **4.3 bar**

■ You will find the maintenance unit at the back of the machine near the air supply (for the position marking see chapter „View Plans / General View“).

➢ Remove the rubber cap (1) on the pressure control device with a suitable tool, e.g. a screw driver

■ The pressure control device is located on the pneumatic unit

■ You will find the pneumatic unit in the switch cabinet of the UV dryer control

➢ Turn the hysteresis screw (2) of the pressure control device counterclockwise to the limit stop

➢ Turn the adjusting screw (3) for the starting point counterclockwise until the pressure control device starts running

☑ The LED of the corresponding SPS entry lightens

➢ Turn the adjusting screw for the starting point only clockwise until the pressure control device stops running again

➢ Adjust the control valve of the maintenance unit to **5.5 bar**

➢ Plug the rubber cap back onto the pressure control device

Note:

If the air pressure set on the control valve is not $\mathbf{P_{set}}$ **= 5.5 bar**, you must adjust the cooling of the UV lamp (See chapter „Adjustment of the UV Lamp Cooling“)

9.14.6 Adjusting the shutter speed

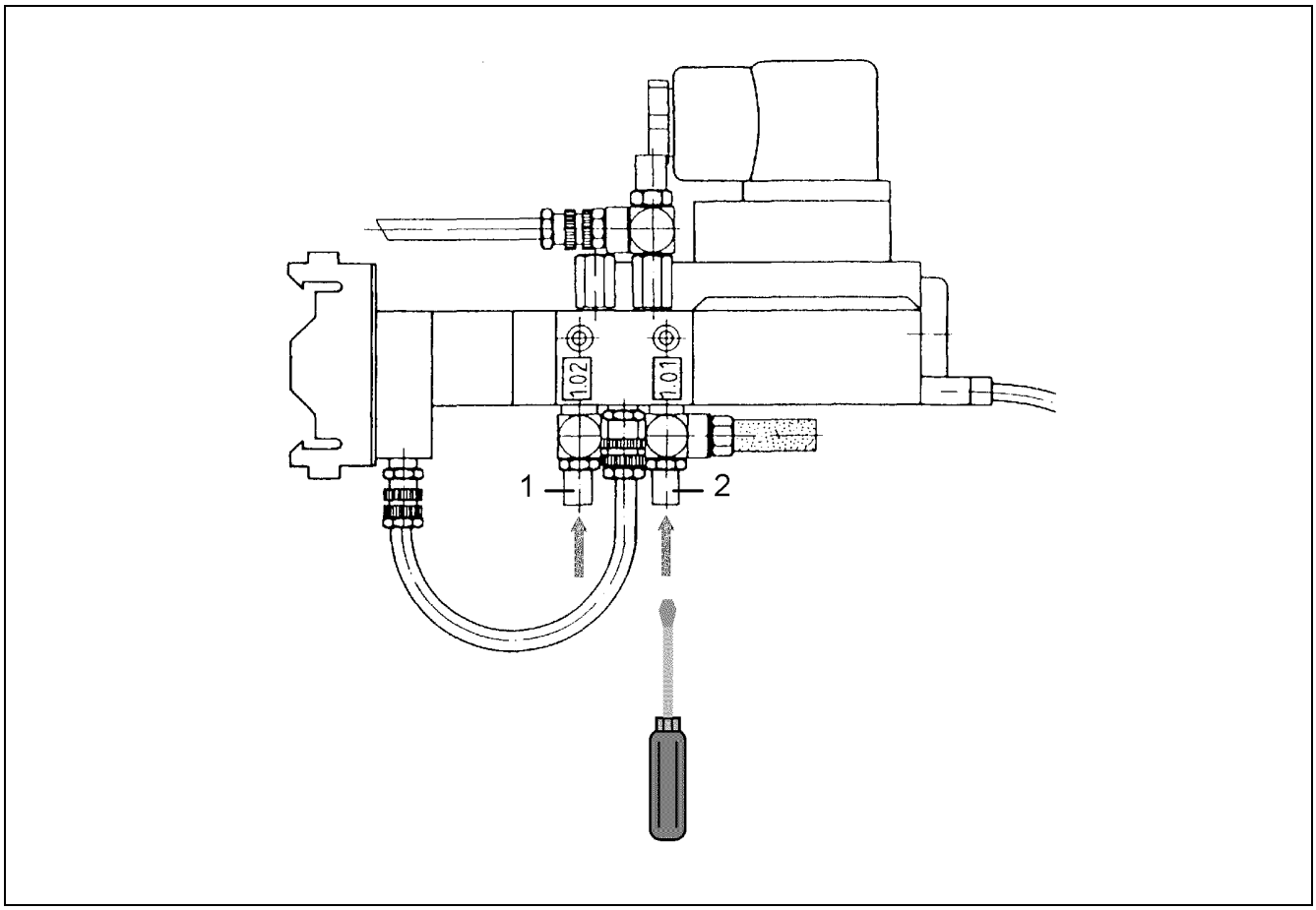


Figure 5: Adjusting the shutter speed

1	outgoing air throttle open shutter
2	outgoing air throttle close shutter

The rate at which the flaps of the UV dryer shutter open and close is set on two outgoing air throttles on the valve „shutter“

- The outgoing air throttles of this valve are located on the pneumatic unit
- Opening and closing speed of the shutter are separately set

➢ Set outgoing air throttle open shutter (1) and outgoing air throttle close shutter (2) with a screw driver so that the shutter is closed or opened, respectively, after (at the earliest) 0.5 seconds or up to (at the latest) 2 seconds

direction of rotation	**open / close shutter**
clockwise	slower
counterclockwise	faster

9.14.7 Adjusting the UV lamp cooling

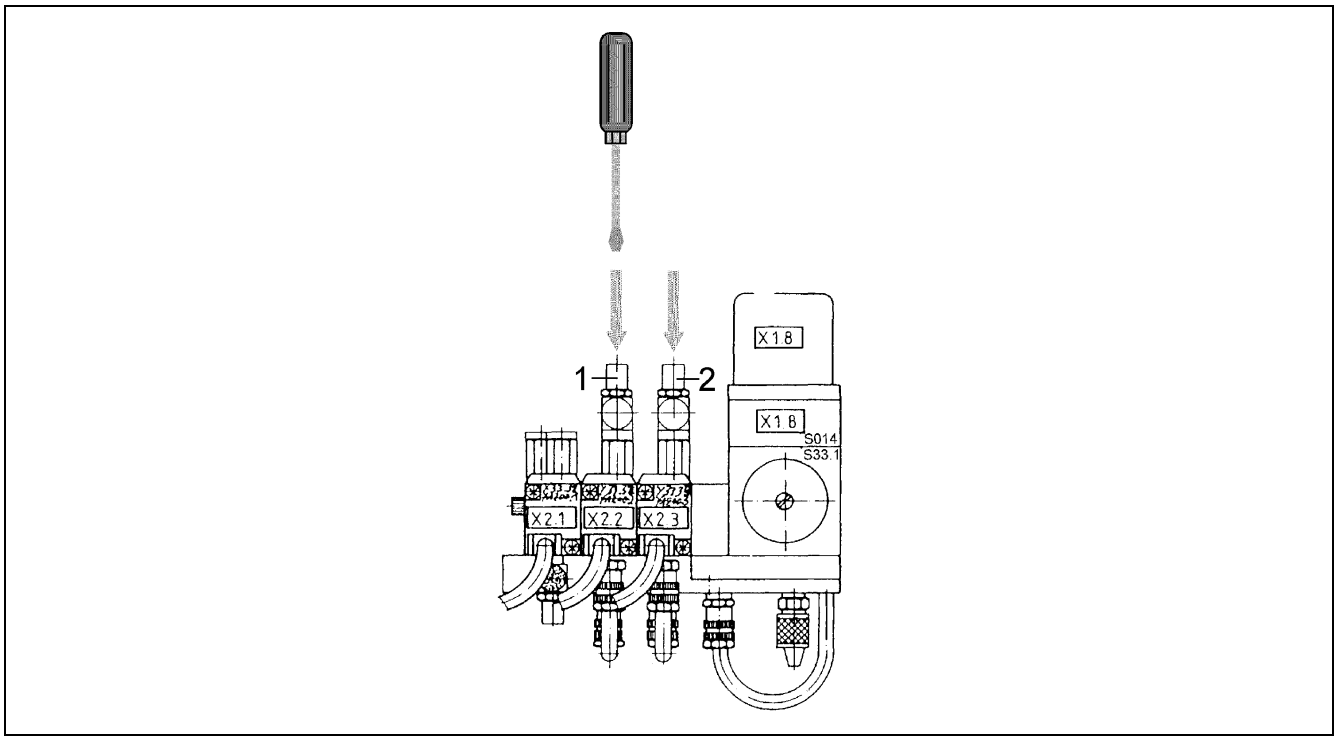


Figure 6: Adjusting the UV lamp cooling

1	outgoing air throttle valve part-load (2/3)
2	outgoing air throttle valve full load (3/3)

➢ Check the air pressure set on the maintenance unit: $\mathbf{P_{set} = 5.5\ bar}$

➢ Connect a flow meter in the supply line to the UV dryer head

➢ Adjust the air quantity on the pneumatic block with a screw driver, depending on the following parameters:

Operating mode:		Stand-by mode	Printing mode speed V **<** full load switching threshold for UV dryer	Printing mode Speed V **>** full load switching threshold for UV dryer
Lamp power:		40% (1/3)	70% (2/3)	100% (3/3)
Dryer main board	LED V6	Off	On	On
	LED V5	Off	Off	On
Air quantity (l/min)		–	4.1 l/min	6.1 l/min
Adjust valve on outgoing air throttle:			Part-load (1)	Full load (2)

- In order to increase the air quantity, turn the screw driver counterclockwise
- In order to decrease the air quantity, turn the screw driver clockwise

Note: If you have changed parameters at the UV lamp cooling, you must check and, if necessary, readjust lamp current (See chapter „Adjustment of the UV Dryer Lamp Current“) and controller card (See chapter „Adjustment of the Dryer Controller Card“)

10 Spare Parts Sets

10.1 Start Set vskPRINT 400/410

10.1.1 With plate cylinder

XZMEK00300

Qty.	Designation	Order–No.
1	UV-Ink black (2,5 kg)	HIU32S01
1	10 liter cleaner U 314	HI001001
1	1 liter cleaner HP 500	HI001004
1	adhesive tape	HMF23311
1	cleaning pads	ZA02T001
1	hands cleaner (Reduran 250 ml)	ZA02H006
100	rubber gloves	ZA02S001

10.1.2 With magnetic cylinder

XZMEK03500

Qty.	Designation	Order-No.
1	UV-Ink black (2,5 kg)	HIU32S01
1	10 liter cleaner U 314	HI001001
1	1 liter cleaner HP 500	HI001004
1	cleaning pads	ZA02T001
1	hands cleaner (Reduran 250 ml)	ZA02H006
100	rubber gloves	ZA02S001

When ordering spare parts, please always indicate number of type (Ident.No.) and series (Lfd.No.)!!

10.2 Wearing parts-set vskPRINT 400/410

10.2.1 Equipment with dryer 2000 Watt

XZMEK00400 –dryer 2000 Watt

Qty.	Designation	Order-No.
10	doctor blade	EB0D0075-02
2	reflector plate	KU4PZ002
8	belt	ADG1074H
1	side part SI	EN080102
1	side part SII	EN080103
1	print cylinder	XWA00076
1	UV-lamp (200 mm; 100W/cm)	KU300002
4	filter mats	KU50Z211
5	Lamps	KHGK5L02
2	Lamps	KHGK6305

When ordering spare parts, please always indicate number of type (Ident.No.) and series (Lfd.No.)!!

10.2.2 Equipment with dryer 3000 Watt

XZMEK00400-01- dryer 3000 Watt

Qty.	Designation	Order-No.
8	belt	ADG1074H
10	doctor blade	EB0D0075-02
1	side part SI	EN080102
1	side part SII	EN080103
5	lamps	KHGK5L02
2	lamps	KHGK6305
1	UV-lamp (300 mm; 120 W/cm)	KU310001
4	filter mats	KU50Z211
1	filter mat	PWF03Z03
1	print cylinder	XWA00076

When ordering spare parts, please always indicate number of type (Ident.No.) and series (Lfd.No.)!!

10.3 Spare Parts Sets vskPRINT 400

10.3.1 Small Spare Parts-Set

XZMEK03100 – dryer 2000 Watt and dryer 3000 Watt

Qty.	Designation	Order-No.
8	Conveyor Belt Endl.	ADG1074H
7	Conveyor Belt (CH)	ADG10118
1	Synchroflex-Toothed Belt	ADB23232
1	Synchroflex-Toothed Belt	ADB23073
1	Chain Complete	XKETD06300
1	Chain Complete	XKETB05101
2	Free Running w. Bearings	AA36B16D
2	Turning Knob Compl.	XDRK0004
2	Groove Ball Bearing	AA01K154
1	Light Conductive Fibre	KBCG0001
1	Initiator Inductive	KBAB3402

10.3.2 Large Spare Parts-Set

XZMEK02900 - dryer 2000 Watt - 200 mm dryer width

Qty.	Designation	Order-No.
8	Conveyor Belt Endl.	ADG1074H
7	Conveyor Belt (CH)	ADG10118
1	Synchroflex-Toothed Belt	ADB23232
1	Synchroflex-Toothed Belt	ADB23073
1	Chain complete	XKETD06300
1	Chain complete	XKETB05101
2	Bevel Wheel with Touch up	AB5B2501-06
2	Bevel Wheel	AB5B2501-04
1	Chain Wheel with Touch up	AB4CK150-02
2	Chain Wheel	AB4CA140-23
1	Chain Wheels compl.	EZKE0014
1	Chain Wheel compl.	EZKE0013
1	Intermediate Wheel compl.	XZR0001200
1	Worm Wheel with Touch up	AB7PD160-01
1	Hollow Worm Wh. w. Touch up	AB7CD100-01
1	Drive Screen Roller	XAT0001000
1	Drive Form Inking Roller	XAT0000600
1	Couple compl.	XKU0001700
1	Drive Print Cylinder	XAT0000900
4	Groove Ball Bearing	AA01K154
2	Free-Running w. Bearings	AA36B16D
2	Turning Knob compl.	XDRK0004
1	Reflector-Iinsert. Plate	KU4PZ002
1	Light Conductive Fibre	KBCG0001
1	Initiator Inductive	KBAB3402
1	Initiator with 2m cable	KBA10001
1	Light Conductive Fibre	KBCG0002
1	Light Barrier Amplifier	KBCV0005
1	Light Barrier Lens	KBCZ0001
1	Cable Case 4pol.	KD3R2431
1	Micro Switch	KS5H1002
1	Actuater JV-9005-C	KS5HZ101
1	Igniter. 2000W	KU3Z0003
1	Main Drive Compl.	XANT005701
1	Axial Ventilator	YAL1000100
1	Main Board A008	YLK0080300

When ordering spare parts, please always indicate number of type (Ident.No.) and series (Lfd.No.)!!

Large spare parts-Set

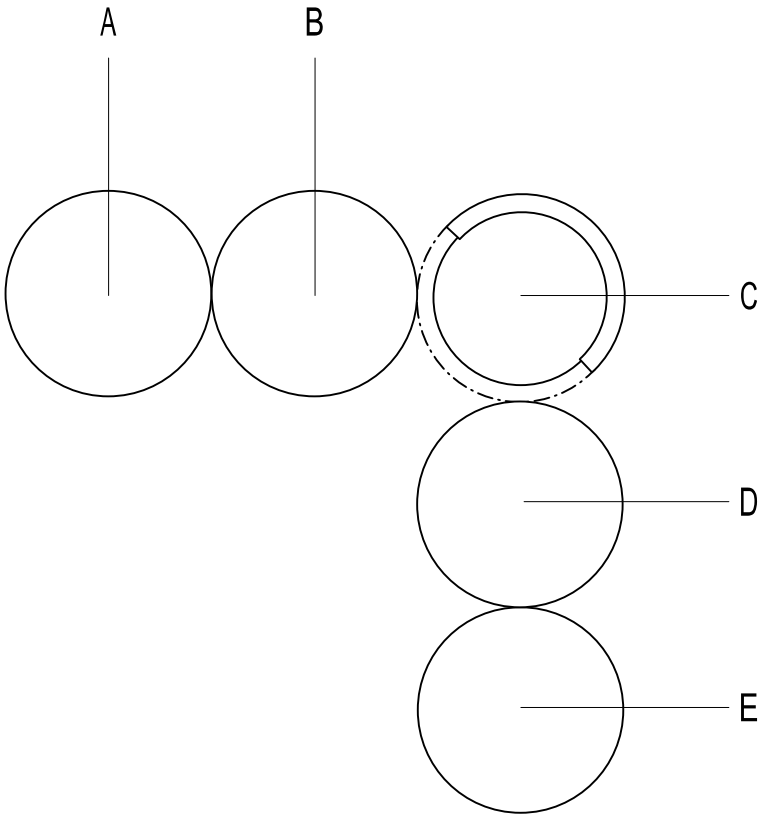
XZMEK03300 – dryer 3000 Watt - 300 mm dryer width

Qty.	Designation	Order-No.
8	Conveyor Belt Endl.	ADG1074H
7	Conveyor Belt (CH)	ADG10118
1	Synchroflex-Toothed Belt	ADB23232
1	Synchroflex-Toothed Belt	ADB23073
1	Chain complete	XKETD06300
1	Chain complete	XKETB05101
2	Bevel Wheel with Touch up	AB5B2501-06
2	Bevel Wheel	AB5B2501-04
1	Chain Wheel with Touch up	AB4CK150-02
2	Chain Wheel	AB4CA140-23
1	Chain Wheels compl.	EZKE0014
1	Chain Wheel compl.	EZKE0013
1	Intermediate Wheel compl.	XZR0001200
1	Worm Wheel with Touch up	AB7PD160-01
1	Hollow Worm Wheel with Touch up	AB7CD100-01
1	Drive Screen Roller	XAT0001000
1	Drive Form Inking Roller	XAT0000600
1	Couple Compl.	XKU0001700
1	Drive Print Cylinder	XAT0000900
4	Groove Ball Bearing	AA01K154
2	Free-Running w. Bearings	AA36B16D
2	Turning Knob compl.	XDRK0004
1	Light Conductive Fibre	KBCG0001
1	Initiator Inductive	KBAB3402
1	Light Conductive Fibre	KBCG0002
1	Light Barrier Amplifier	KBCV0005
1	Light Barrier Lens	KBCZ0001
1	Cable Case . 4pol.	KD3R2431
1	Micro Switch UDC3C-B3LC	KS5G0004
1	Igniter . INPRINT 310	KU3Z0005
3	Quartztubes	KU3ZQ001
2	Turning Knob compl.	XDRK0004
1	Main Board A008	YLK0080300

When ordering spare parts, please always indicate number of type (Ident.No.) and series (Lfd.No.)!!

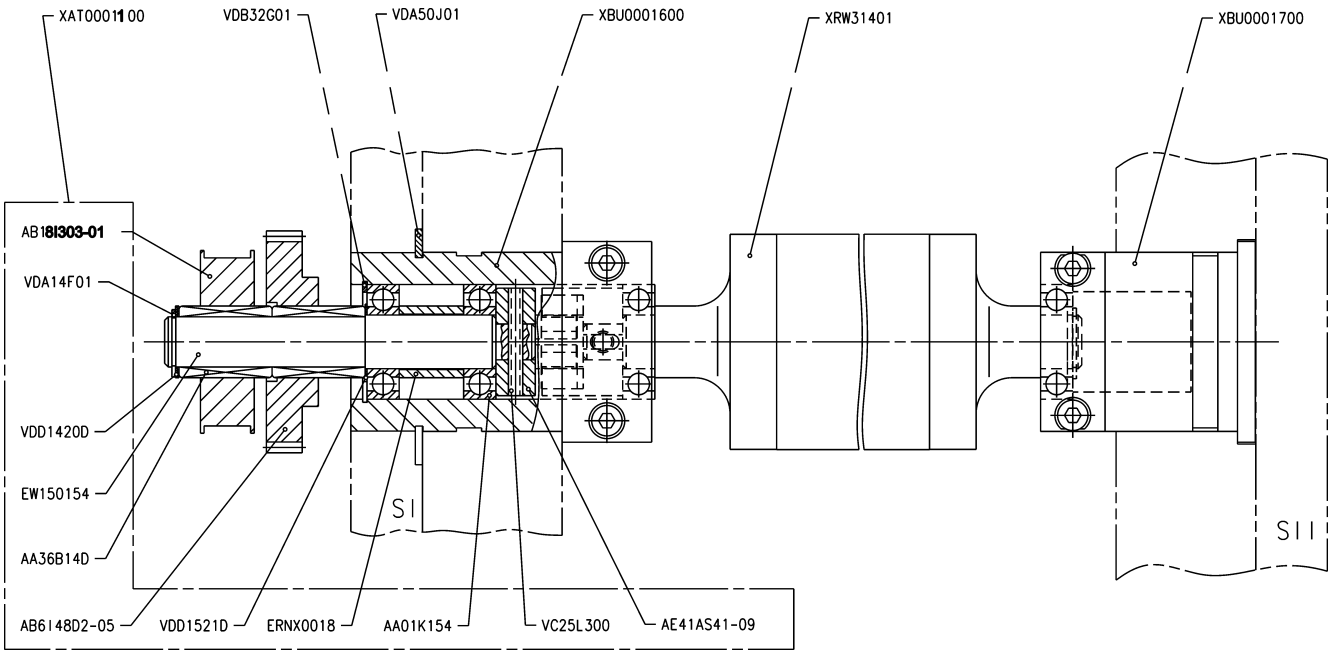
11 Spare Parts List

11.1 Print Unit



Pos.	Designation
A	screen roller
B	form inking roller
C	cliche cylinder
D	print cylinder
E	counter pressure cylinder

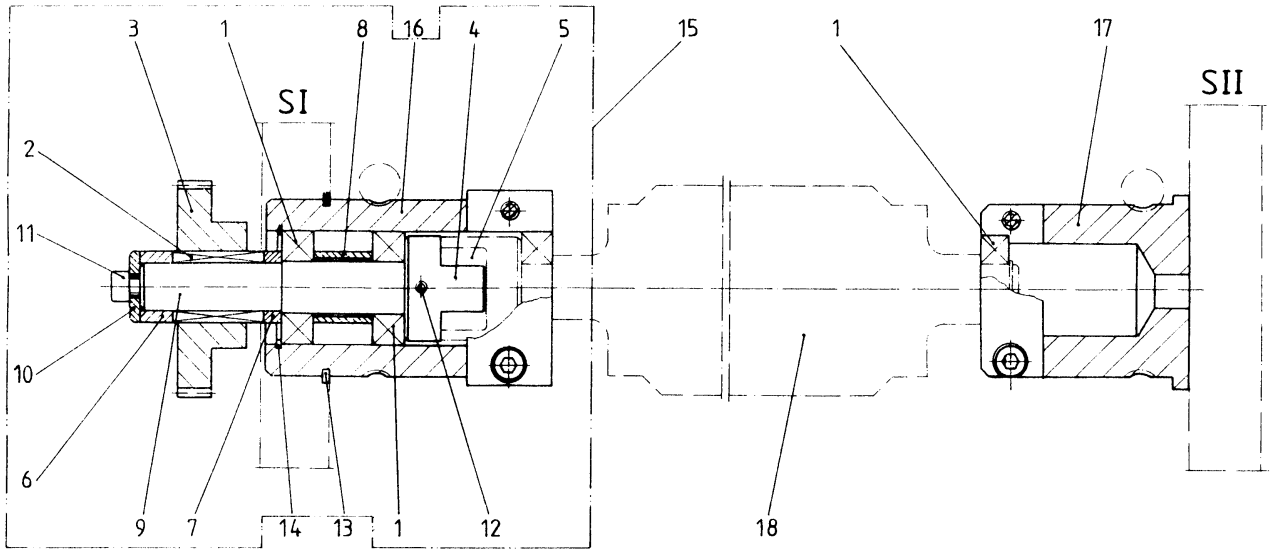
11.1.1 Screen Roller (Pos. A, XANT025300)



XANT025300	**Screen Roller Compl.**
Order-No.	**Designation**
VDA50J01	seeger ring
VDB32G01	seeger ring
XBU0001600	bush complete
XBU0001700	bush complete
XRW31201	screen roller complete

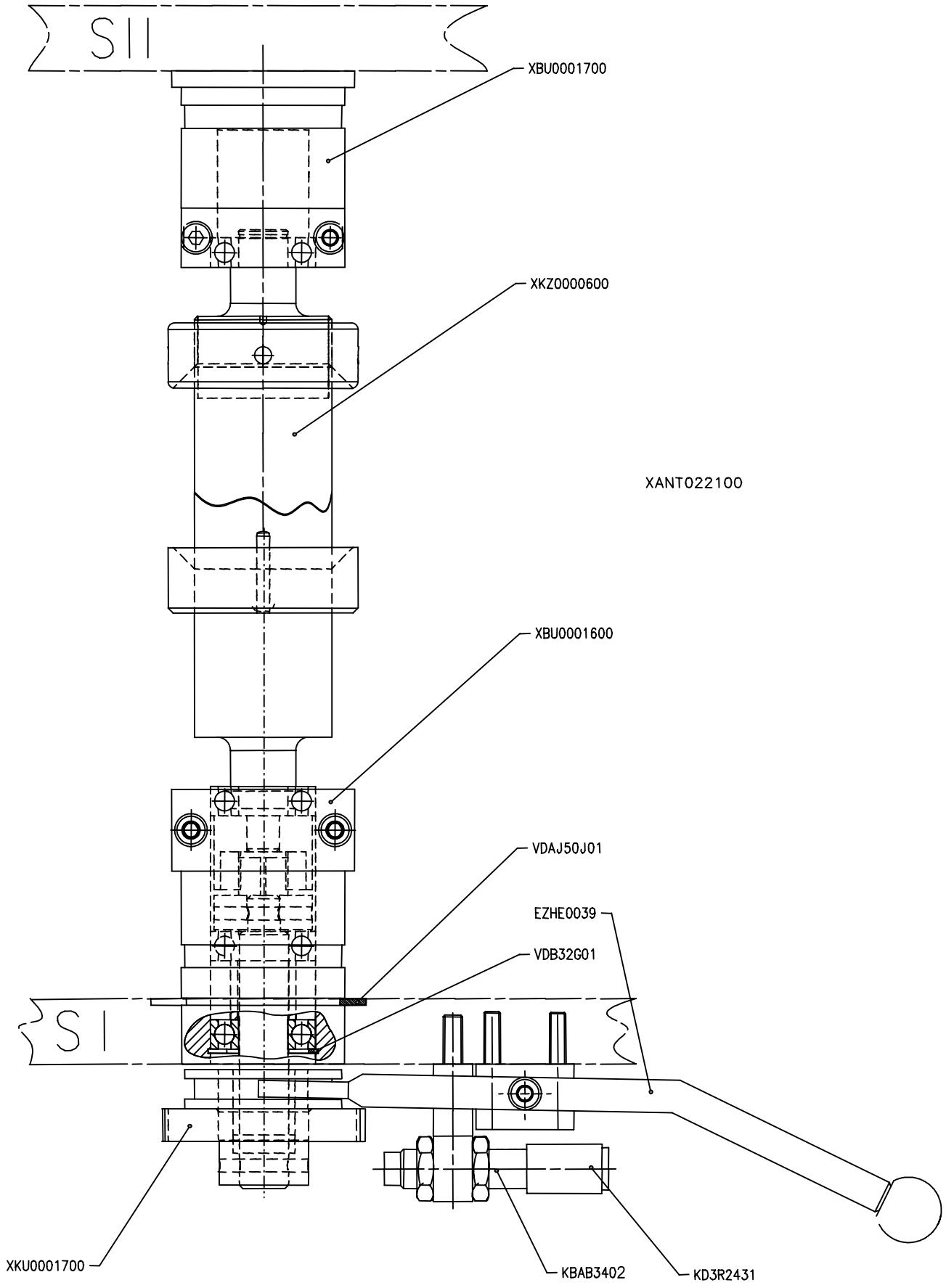
XAT0001100	**drive screen roller**
Order-No.	**Designation**
AB18I303-01	toothed belt wheel
AB6I48D2-05	screen roller cog wheel
AE41AS41-09	couple segment
ERNX0018	sleeve
EW150154	drive shaft
VC25L300	clamping sleeve
VDA14F01	seeger ring
AA01K154	dp. gr. ball bearing
VDD1521D	adjusting washer
AA36B14D	free running
VDD1420D	adjusting washer

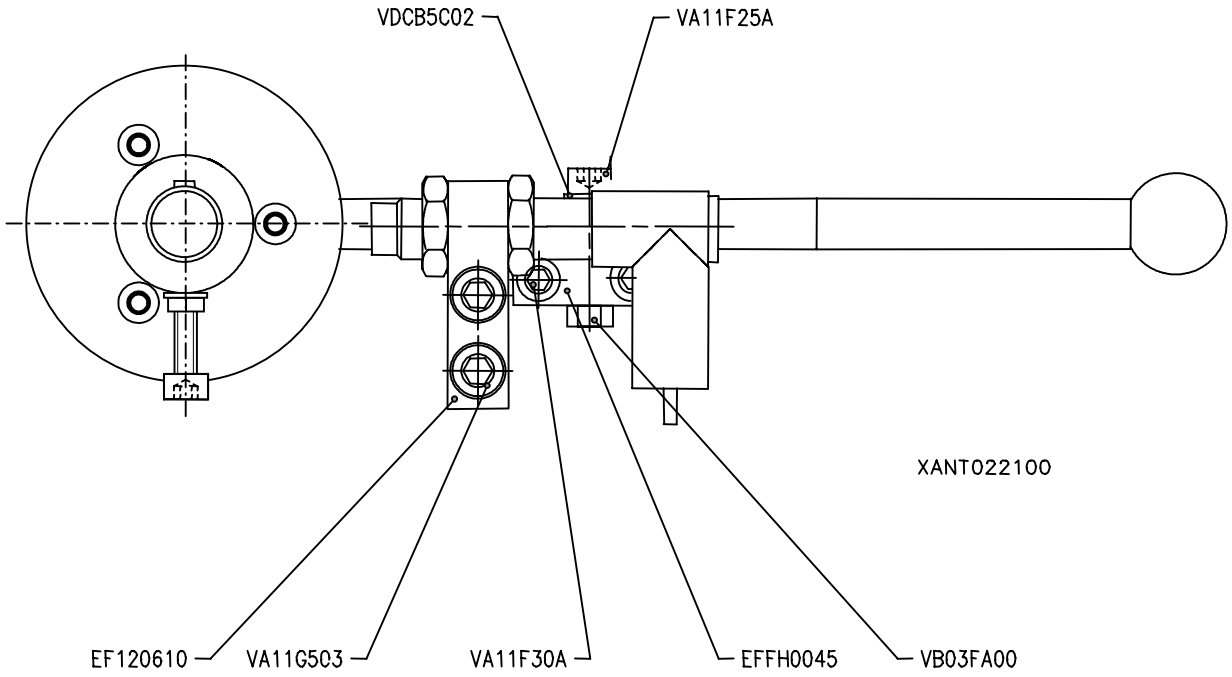
11.1.2 Form Inking Roller (Pos. B, XANT004200)



Pos.	Designation	Order-No.
1	groove ball bearing	AA01K154
2	free wheel	AA36B14D
3	spur wheel	AB6I48C2–02
4	couple segment	AE41AS41–09
5	toothed ring	AE41AZ34
6	distance bush	ERGD0004
7	distance ring	ERGD0005
8	sleeve	ERNX0018
9	drive shaft	EW150152
10	washer	EW200254
11	socket head cap screw	VA11G123
12	clamping sleeve	VC25L300
13	seeger ring	VDA50J01
14	seeger ring	VDB32G01
15	drive form inking roller	XAT0000600
16	bush complete	XBU0001800
17	bush complete	XBU0001900
18	form inking roller complete	XWA00076

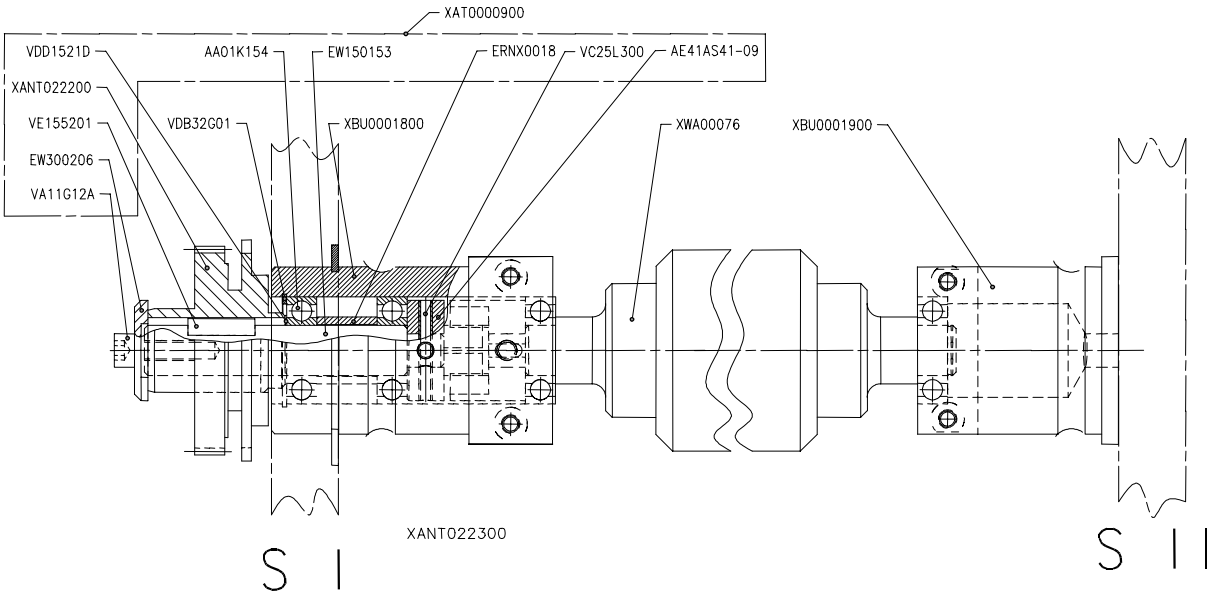
11.1.3 Cliche Cylinder (Pos. C, XANT02210)





Order-No.	Designation
EF120610	holding plate
EFFH0045	bock
EZHE0039	lever
KBAB3402	initiator inductiv
KD3R2431	cable case
VA11F25A	socket head cap srew
VA11F30A	socket head cap srew
VA11G503	socket head cap srew
VB03FA00	SK-nut
VDA50J01	seeger ring
VDB32G01	seeger ring
VDCB5C02	washer
XBU0001600	bush complete
XBU0001700	bush complete
XKU0001700	coupling complete
XKZ0000600	cliche cylinder complete

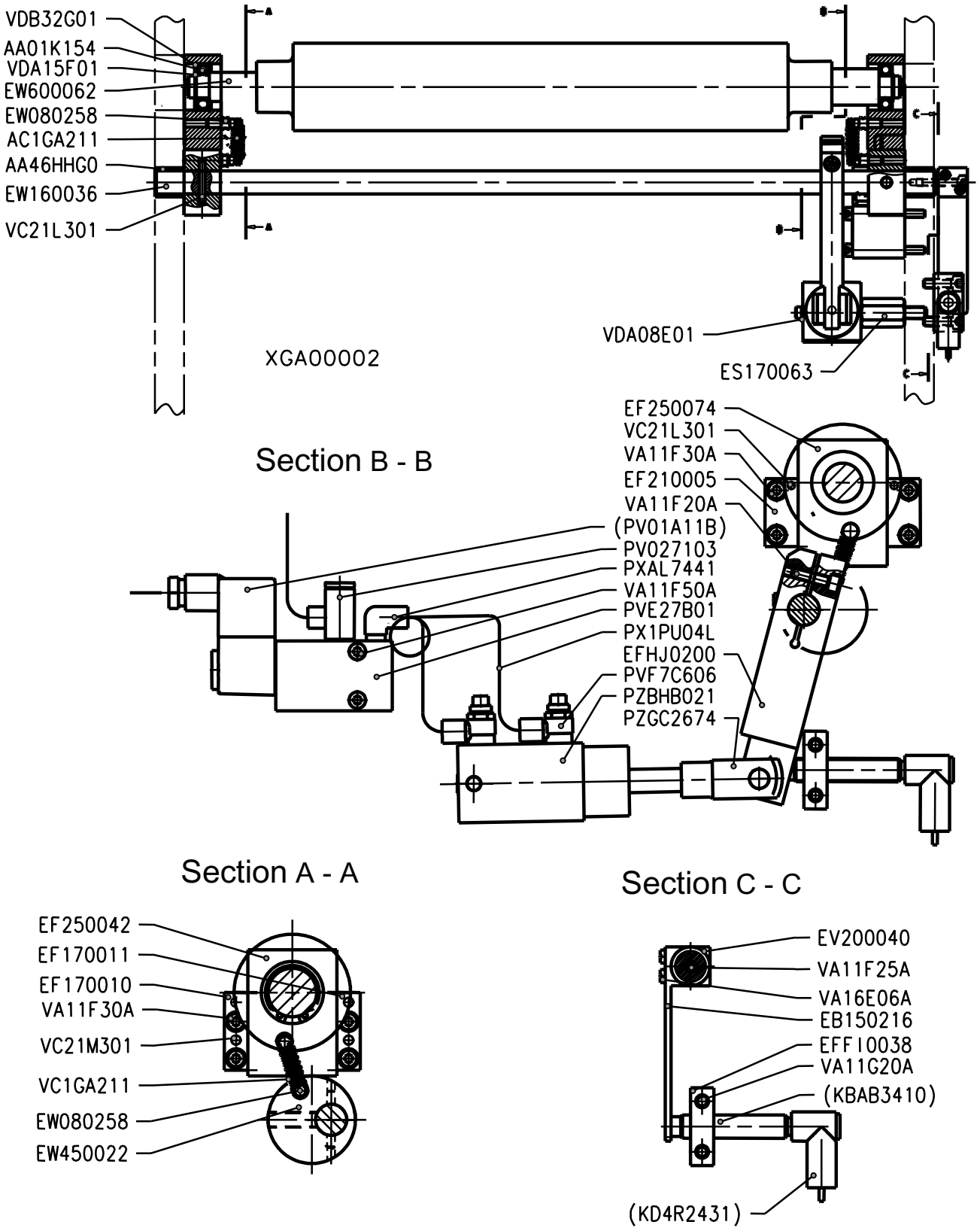
11.1.4 Print Cylinder (Pos. D, XANT022300)



Modul	**XANT022300**	**Drive Print Cylinder Compl.**
	Order-No.	**Designation**
	XBU0001800	bush complete
	XBU0001900	bush complete
	XAT0000900	drive print unit
	XWA00076	print cylinder and form inking roller compl.
	VDA50J01	seeger ring
	VDB32G01	seeger ring

Modul	**XAT0000900**	**Drive Print Unit**
	Order-No.	**Designation**
	AA01K154	groove ball bearing
	AE41AS41-09	coupling segment
	ERNX0018	sleeve
	EW150153	drive shaft
	EW300206	washer
	VA11G12A	cylinder screw ISK
	VC25L300	clamping sleeve
	VDD1521D	adjusting washer
	VE155201	feather key
	XANT022200	drive print unit complete

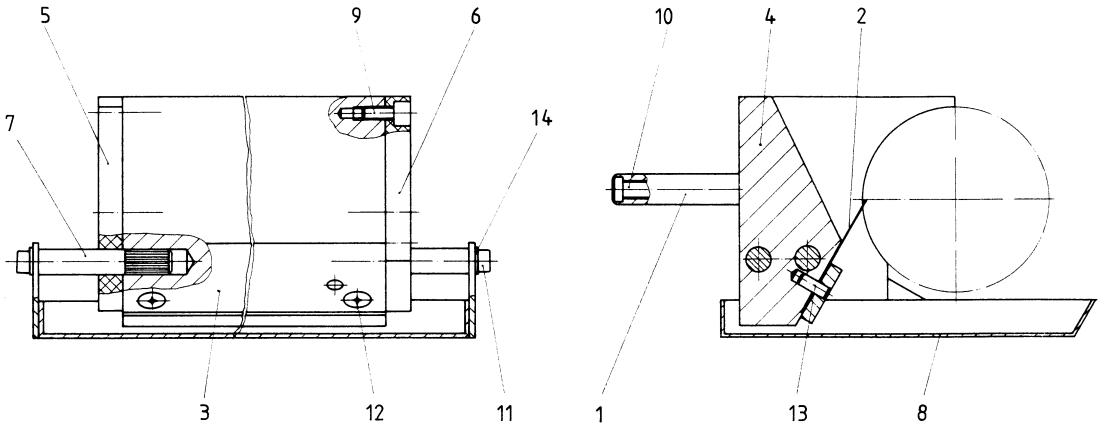
11.1.5 Counter pressure cylinder, (Pos. E, XGA00002)



Counter Pressure Cylinder, (Pos. E, XGA00002)

Order–No.	Designation
AA01K154	deep groove ball bearing
AA46HHG0	porous bearing
AC1GA211	tension spring
EB150216	wing
EF170010	rail
EF170011	rail
EF210005	rail
EF250042	bearing
EF250074	bearing
EFFI0038	holding plate
EFHJ0200	lever
ES170063	holding bolt
EV200040	wing holder
EW080258	bolt
EW160036	spindle
EW450022	eccenter
EW600062	counter pressure cylinder
PV027103	sound absorber
PVE27B01	solenoid valve
PVF7C606	choker valve
PX1PU04S	tube
PXAL7441	L-connector
PZBHB021	tensionning cylinder
PZGC2674	fork head
VA11F20A	cylinder head screw
VA11F25A	cylinder head screw
VA11F30A	cylinder head screw
VA11F50A	cylinder head screw
VA11G20A	cylinder head screw
VA16E06A	cylinder head screw w. slot
VC21L301	straight pin
VC21M301	straight pin
VDA08E01	seeger ring
VDA15F01	seeger ring
VDB32G01	seeger ring

11.2 Doctor Blade Chamber



Pos.	Designation	Order–No.
1	supporting strap	BA2C1101
2	doctor blade	EB0D0075-02
3	clamping ledge	EF060127
4	holder doctor blade	EF400263
5	separation plate SI	EN080102
6	separation plate SII	EN080103
7	bolt	EW080115
8	drip pan	EZFW0007
9	cylinder head screw	VA12E10A
10	cylinder head screw	VA12F454
11	countersunk head screw	VA21E10A
12	countersunk head screw	VA42E10A
13	straight pin	VC20K121
14	washer	VDCBC01

11.3 Magazine

11.3.1 Insertion Magazine Complete (XEM0001700)

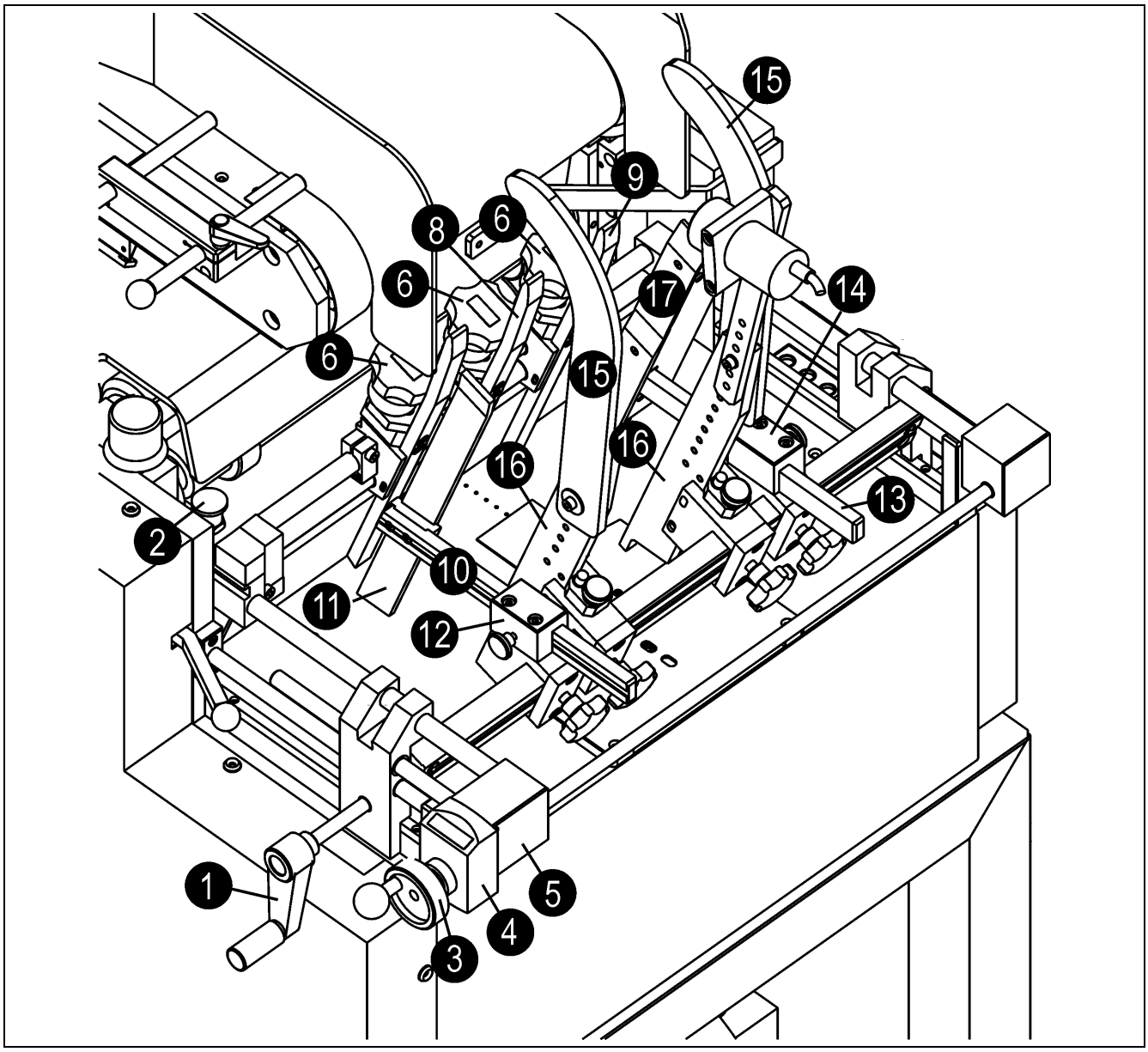


Figure 7: Insertion Magazine Complete (XEM0001700)

item	description	order no.
1	crank handle	BB110640
2	stop bolt	BHR16200
3	handle disc	XSB0000400
4	position indicator	KJ310005
5	adjuster unit complete (incl. items 3 and 4)	XVG0010000
6	Positiometer (adjusting element with integrated reading)	BGS41001
7	insertion ledge complete (incl. item 6)	XEFL003600
8	insertion ledge complete (incl. item 6)	XEFL003700

9	insertion ledge complete (incl. item 6)	XEFL003800
10	holding ledge	EFFH0321
11	side insertion ledge	EFGD0021
12	insertion ledge complete (incl. items 10 and 11)	XEFL002400
13	holding ledge	EFFH0320
14	insertion ledge complete (incl. item 13)	XEFL002300
15	guide arm	EN080030
16	insertion ledge	EFIH0300
17	vibrating insertion ledge complete	XEFL002200

11.4 Vibrating Insertion Ledge Complete (XEFL002200)

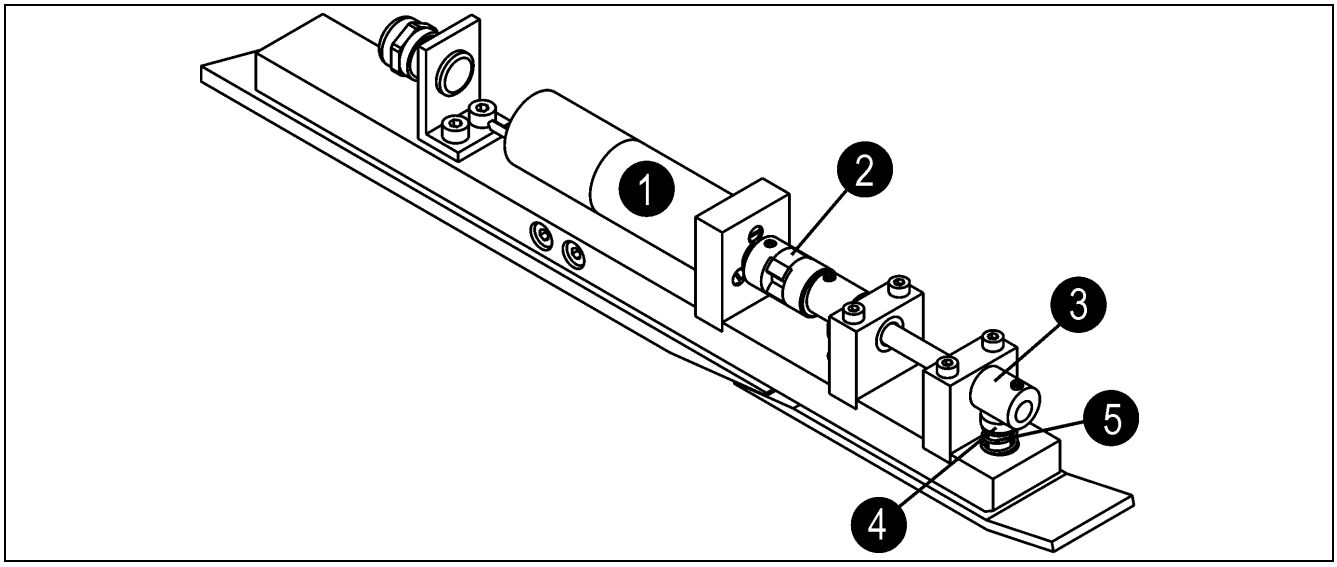
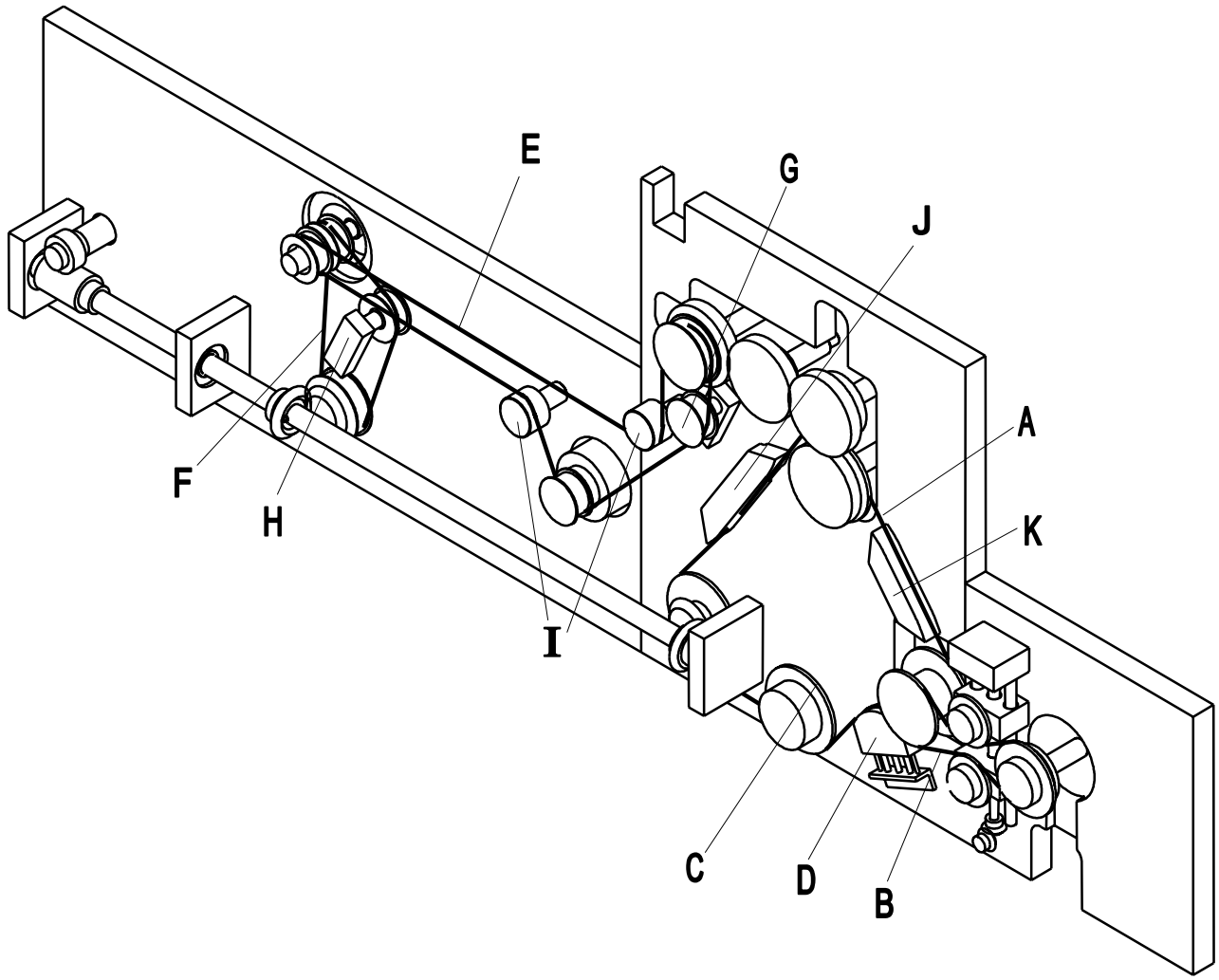


Figure 8: Vibrating Insertion Ledge Complete (XEFL002200)

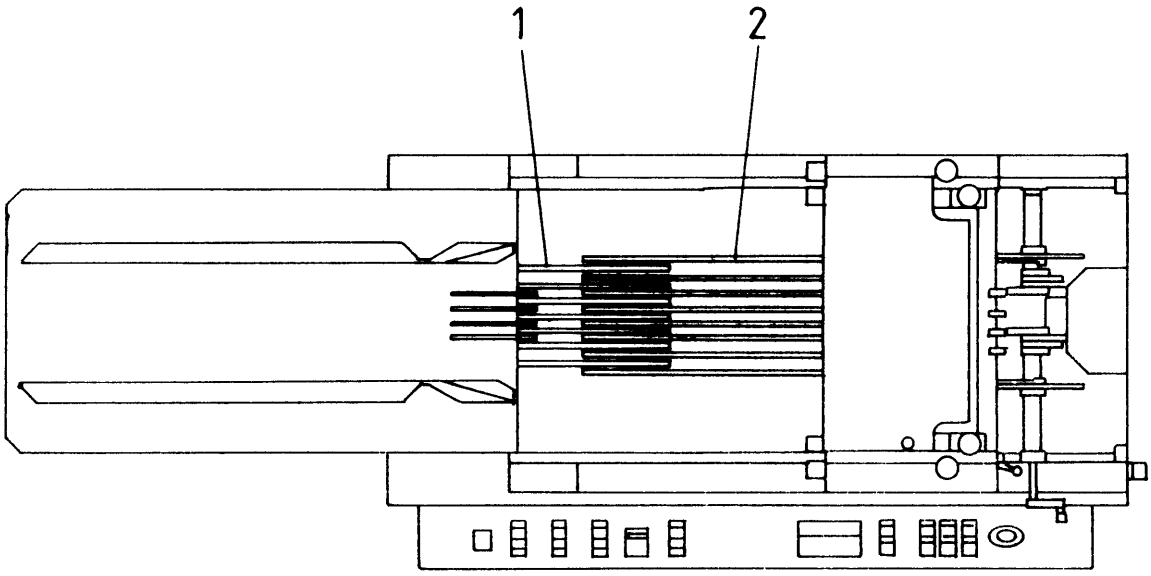
item	description	order no.
1	motor / gear complete	YMG0003700
2	coupl	AE41A23301
3	eccenter	EW120859
4	die	EW101269
5	pressure spring	AC3ED162

11.5 Chains, Chain Wheels, Chain Adjuster; Belt, Belt Adjuster



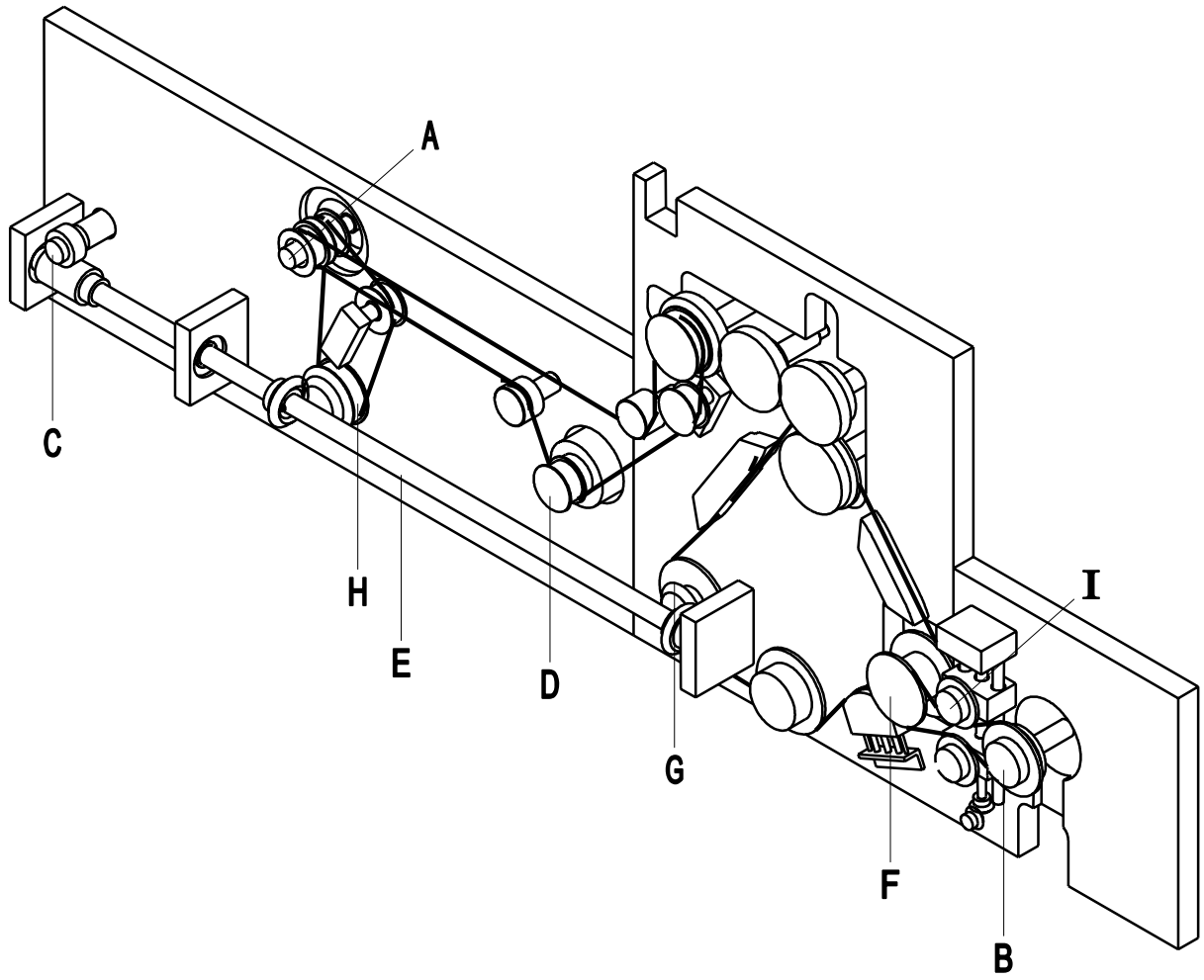
Pos.	Designation	Order-No.
A	chain	XKETD06300
B	chain	XKETB05101
C	chain wheel compl.	XZR0001200
D	mini-chain adjuster	AD270004
E	belt long	ADBB6232
F	belt short	ADB23073
G	belt adjuster with Synchroflex-toothed wheel (AB18I203-02)	XRS0005300
H	belt adjuster with Synchroflex-toothed wheel (AB12E202-03)	XRS0004600
I	belt adjuster compl.	XRS0004500
J	chain adjuster	EN150051
K	chain adjuster	EN150050

11.6 Conveyor Belts



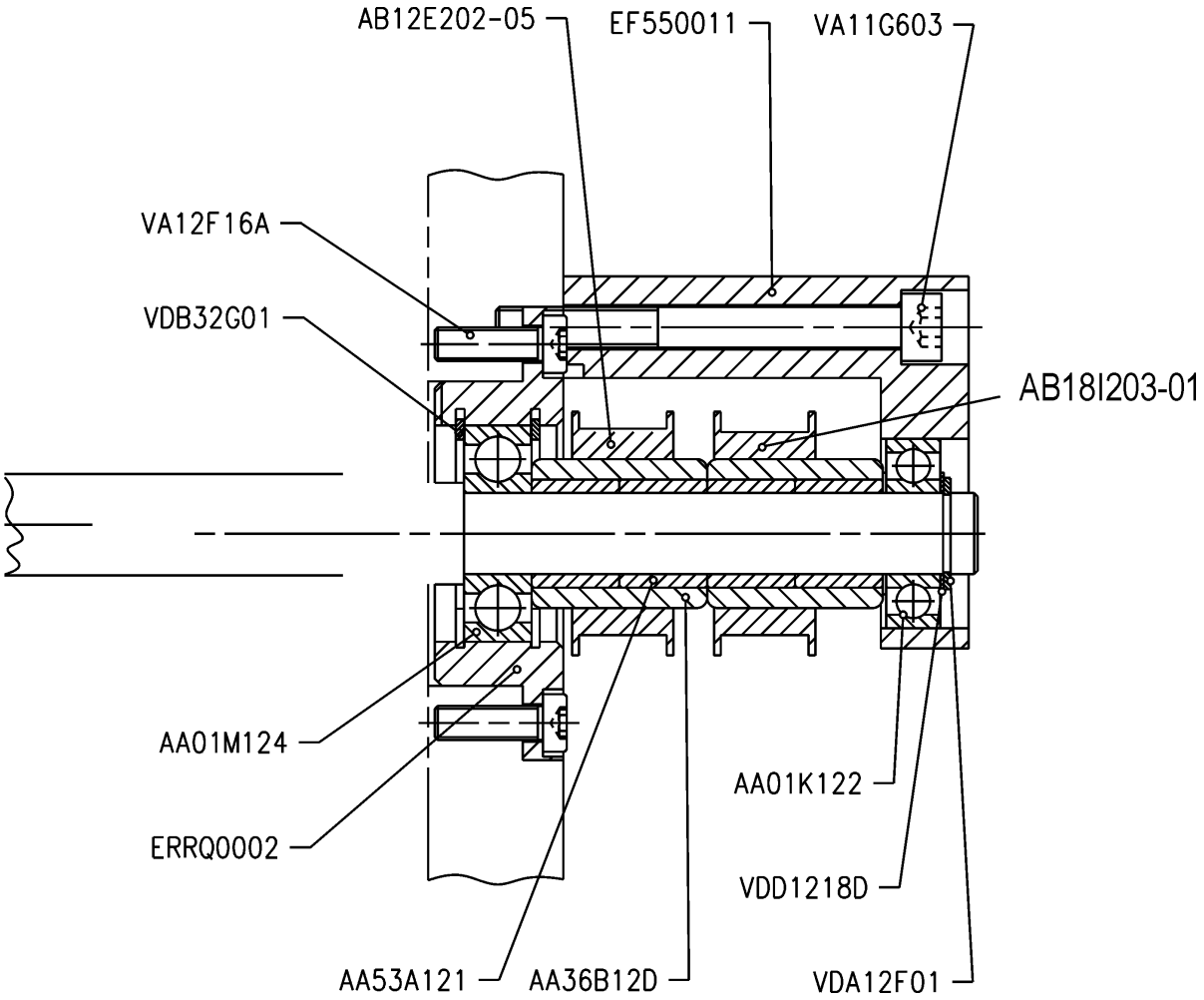
Pos.	Designation	Order–No.
1	conveyor belt	ADG10118
2	conveyor belt	ADG1074H

11.7 Drives



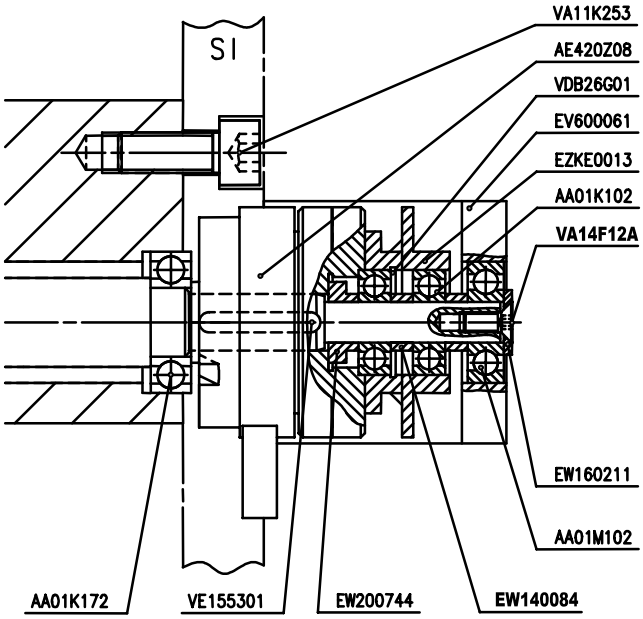
Pos.	Designation	Order-No.
A	drive conveyor belts	XANT025100
B	drive sliding unit	XKU0001400
C	drive paddle wheel	XANT021900
D	drive screen roller	XANT025200
E	cardan drive	XANT02500
F	main drive	XANT021600
G	bearing axis	XLA0000600
H	bearing axis	XLA0000500
I	longitudinal register	XURG001800

11.7.1 Conveyor Belts (Pos. A, XANT025100)



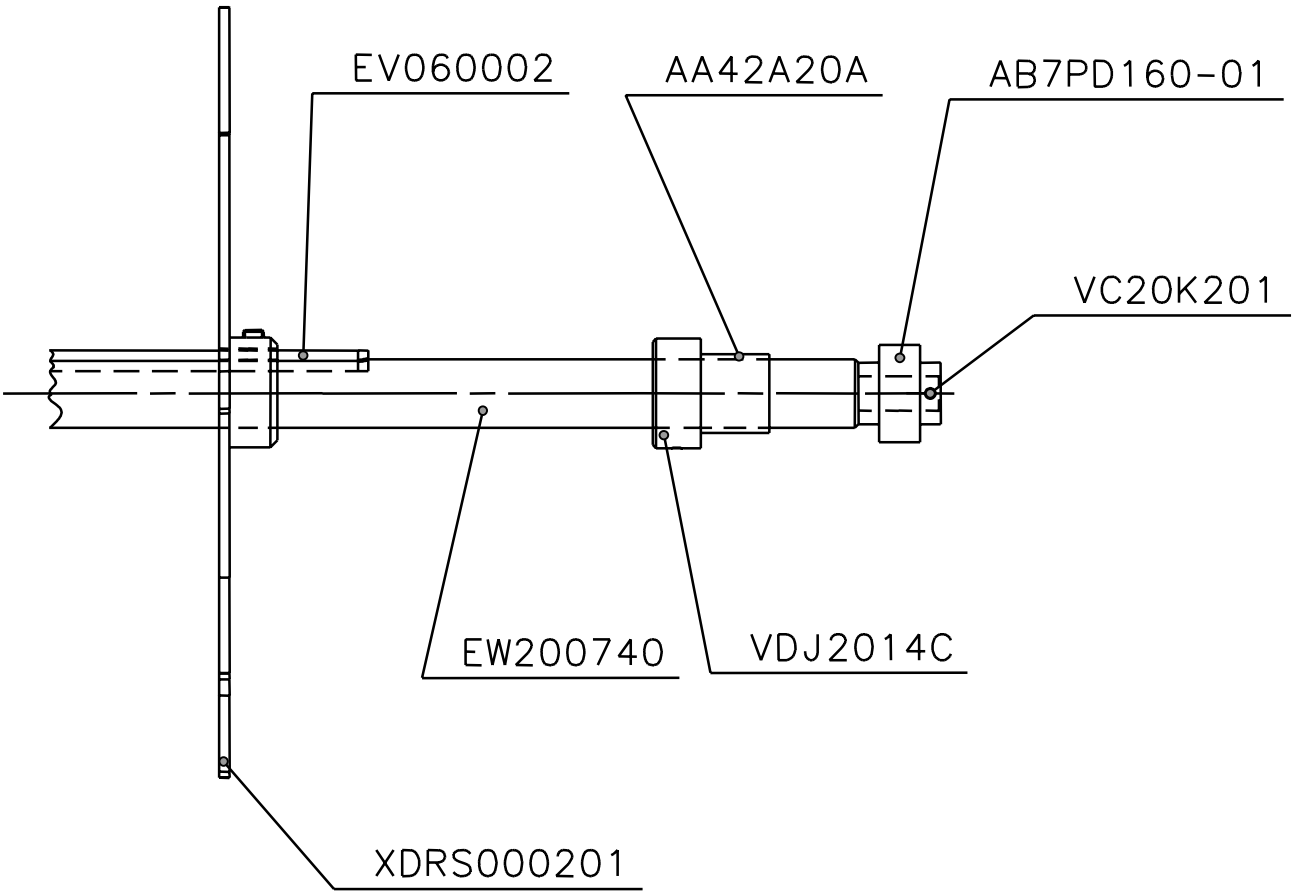
Order No.	Designation
AA01K122	deep groove ball bearing
AA01M124	deep groove ball bearing
AA36B12D	free wheel
AA53A121	ring inside
AB12E202-05	synchroflex-toothed wheel
EF550011	pillow block
ERRQ0002	cover
VA11G603	cylinder head screw
VA12F16A	cylinder head screw
VDA12F01	seeger ring
VDB32G01	seeger ring
VDD1218D	adjusting washer
AB18I203-01	synchroflex-toothed wheel

11.7.2 Drive Sliding Unit (Pos. B, XKU0001400)



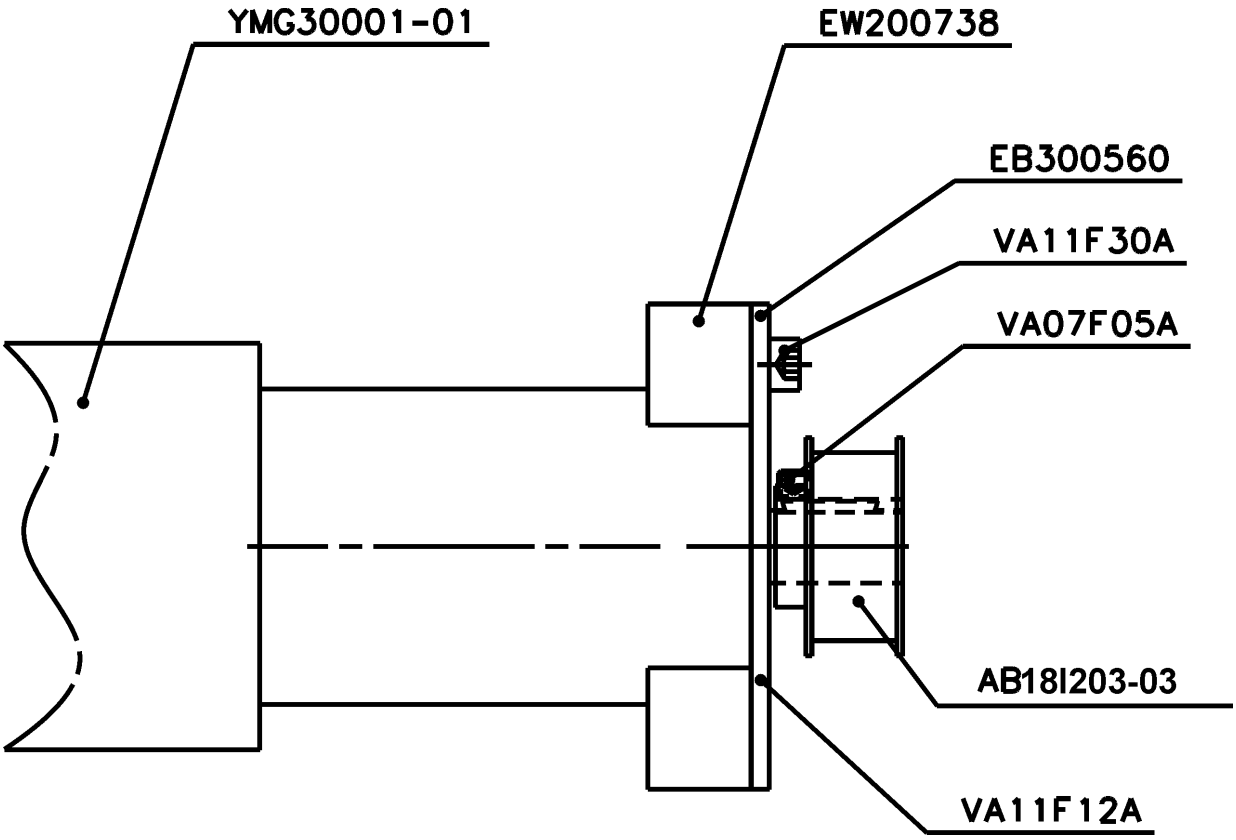
Order–No.	Designation
AA01K102	deep groove ball bearing
AA01K172	deep groove ball bearing
AA01M102	deep groove ball bearing
AE420Z08	toothed couple
EV600061	pillow block
EW140084	sleeve
EW160211	washer
EW200744	sleeve
EZKE0013	chain wheel complete
VA11K253	cylinder head screw
VA14F12A	countersunk head screw
VDB26G01	seeger ring
VE155301	feather key

11.7.3 Drive Paddle Wheel (Pos. C, XANT021900)



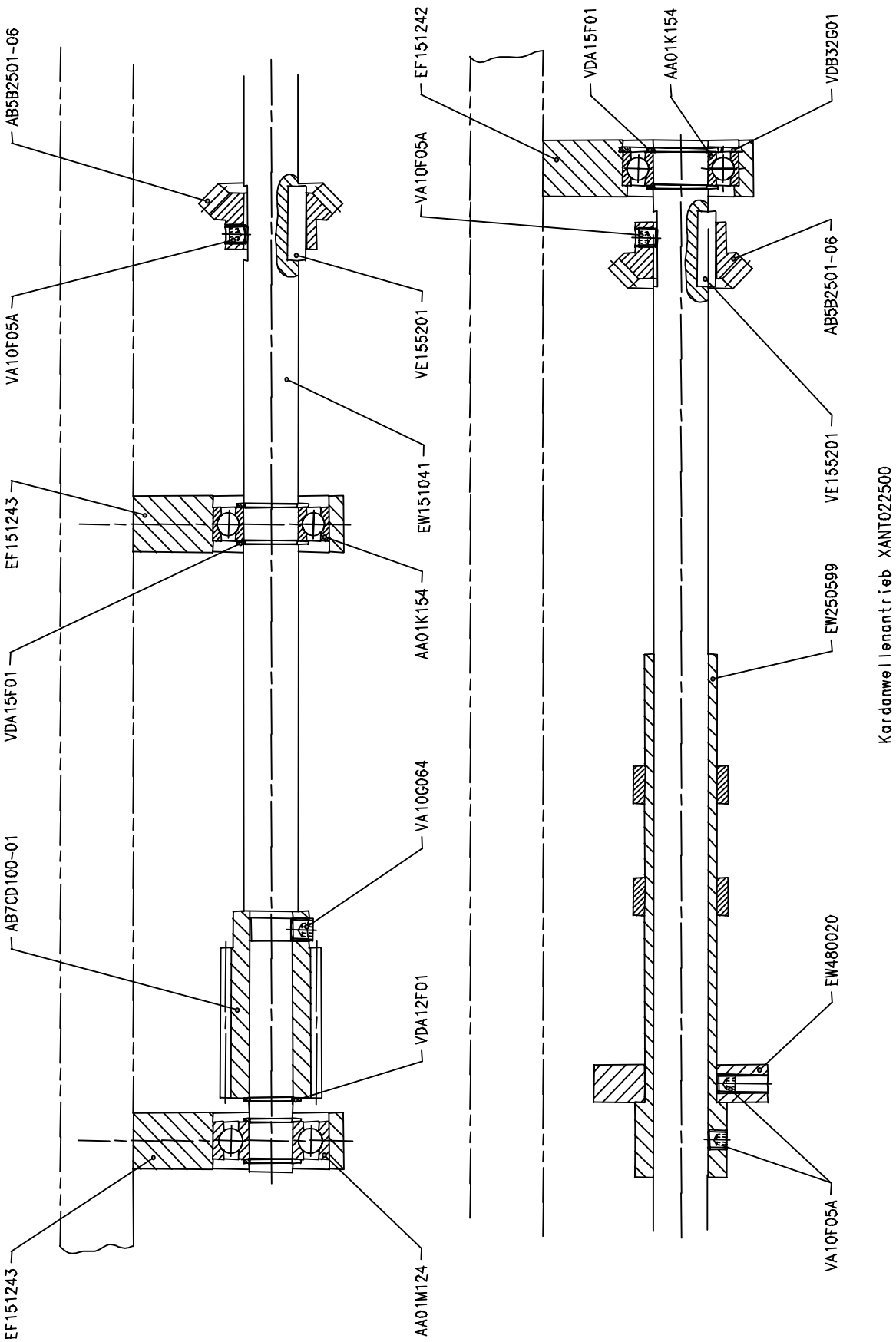
Order No.	Designation
AA42A20A	slide bearing
AB7PD160-01	worm wheel
EV060002	key steel
EW200740	drive shaft paddle wheel
VC20K201	straight pin
VDJ2014C	set collar
XDRS000201	rotating star compl.

11.7.4 Drive Screen Roller (Pos. D, XANT025200)



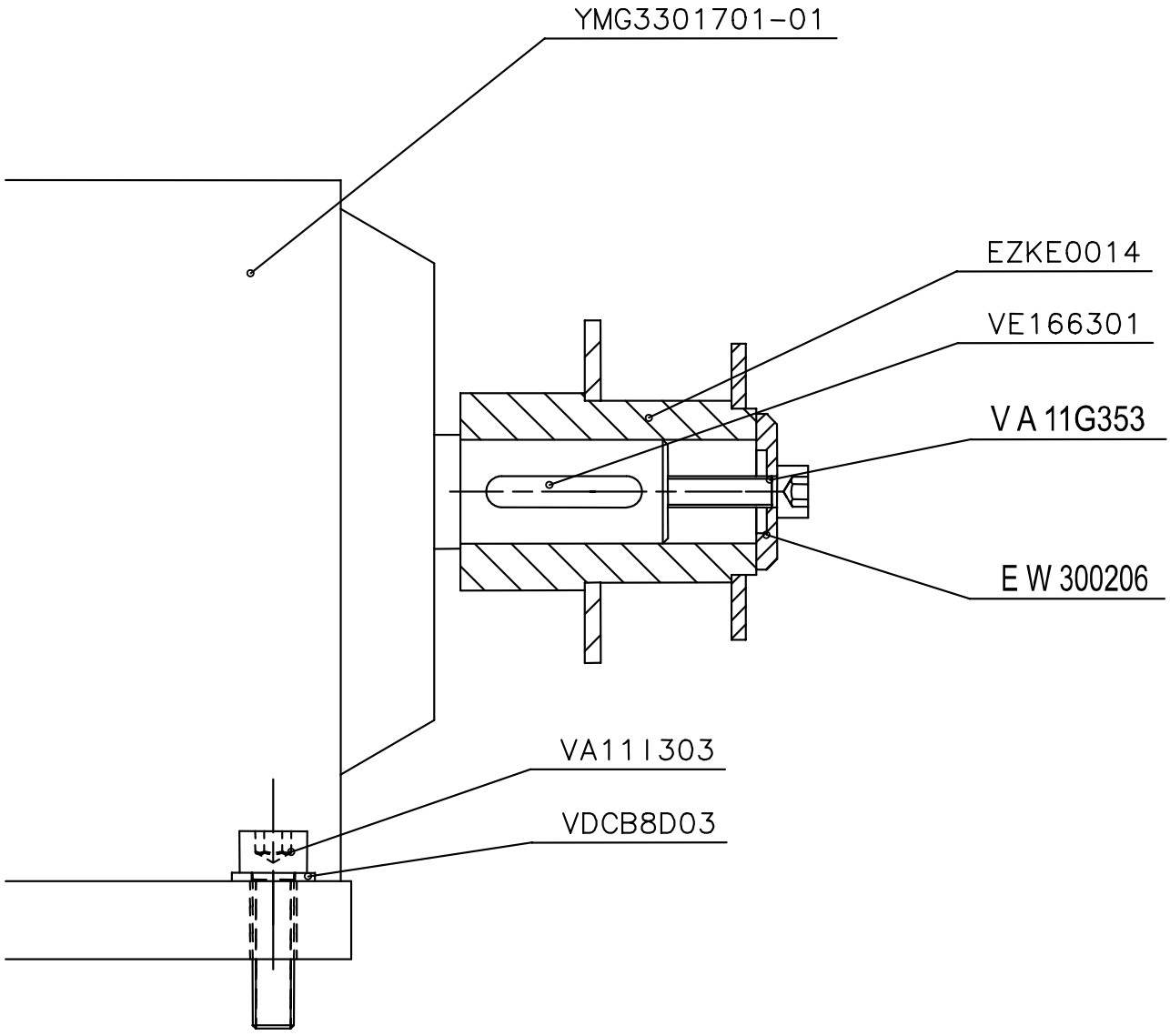
Order-No.	Designation
AB18I203-03	toothed belt wheel
EB300560	motor plate
EW200738	bolt
VA07F05A	threaded pin
VA11F12A	cylinder head screw
VA11F30A	cylinder head screw
YMG30001	three phase gear motor

11.7.5 Cardan Drive (Pos. E; XANT022500)



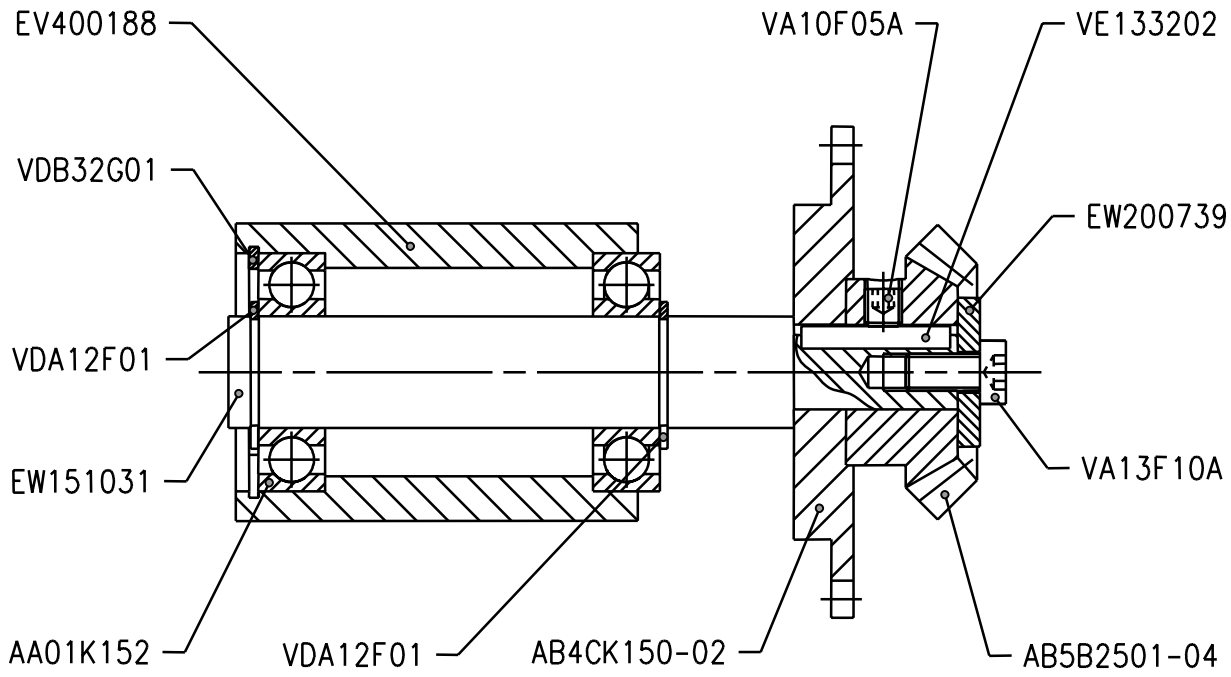
Order–No.	Designation
AA01K154	deep groove ball bearing
AA01M124	deep groove ball bearing
AB5B2501-06	bevel wheel
AB7CD100-01	worm wheel
EF151242	holding block
EF151243	holding block
EW151041	drive shaft
EW250599	initiator sleeve
EW480020	scale disk
VA10F05A	threaded pin
VA10G064	threaded pin
VDA12F01	seeger ring
VDA15F01	seeger ring
VDB32G01	seeger ring
VE155201	feather key

11.7.6 Main Drive (Pos. F, XANT021600)



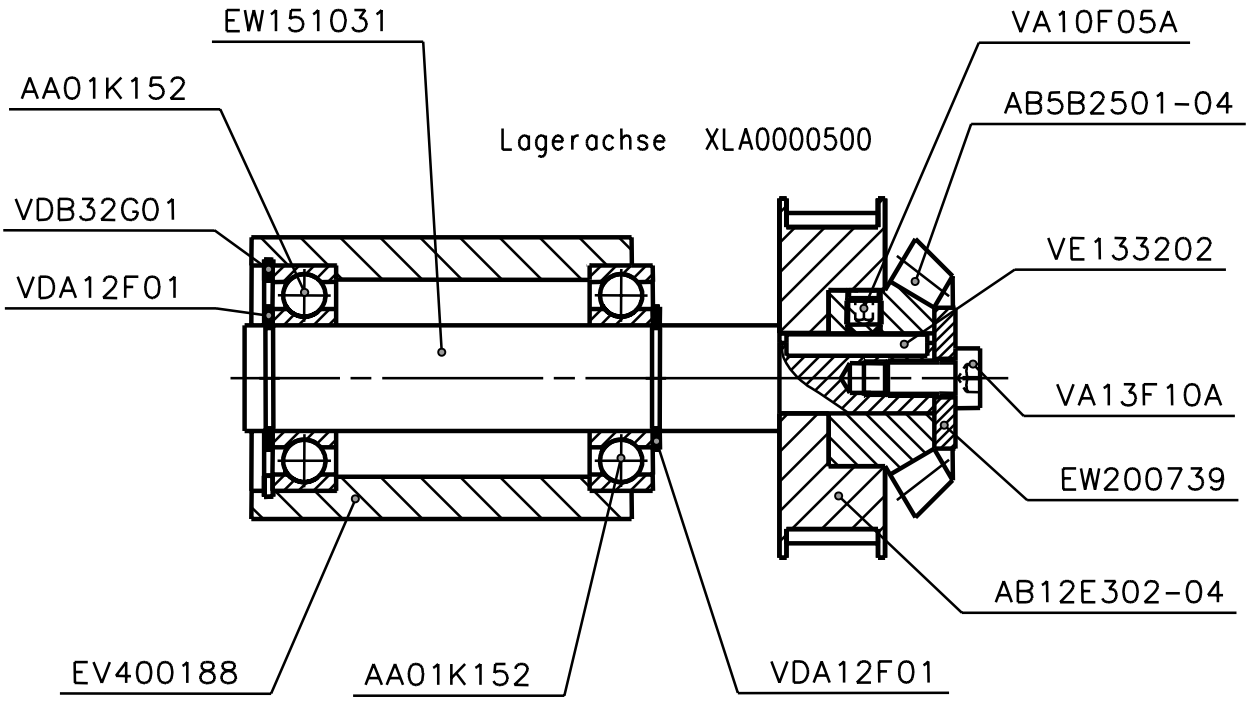
Order–No.	Designation
EW300206	washer
EZKE0014	chain wheel compl.
VA11I303	cylinder head screw
VA11G353	countersunk head screw
VDCB8D03	washer
VE166301	feather key
YMG3301701-01	motor/gear compl.

11.7.7 Bearing Axis (Pos. G; XLA0000600)



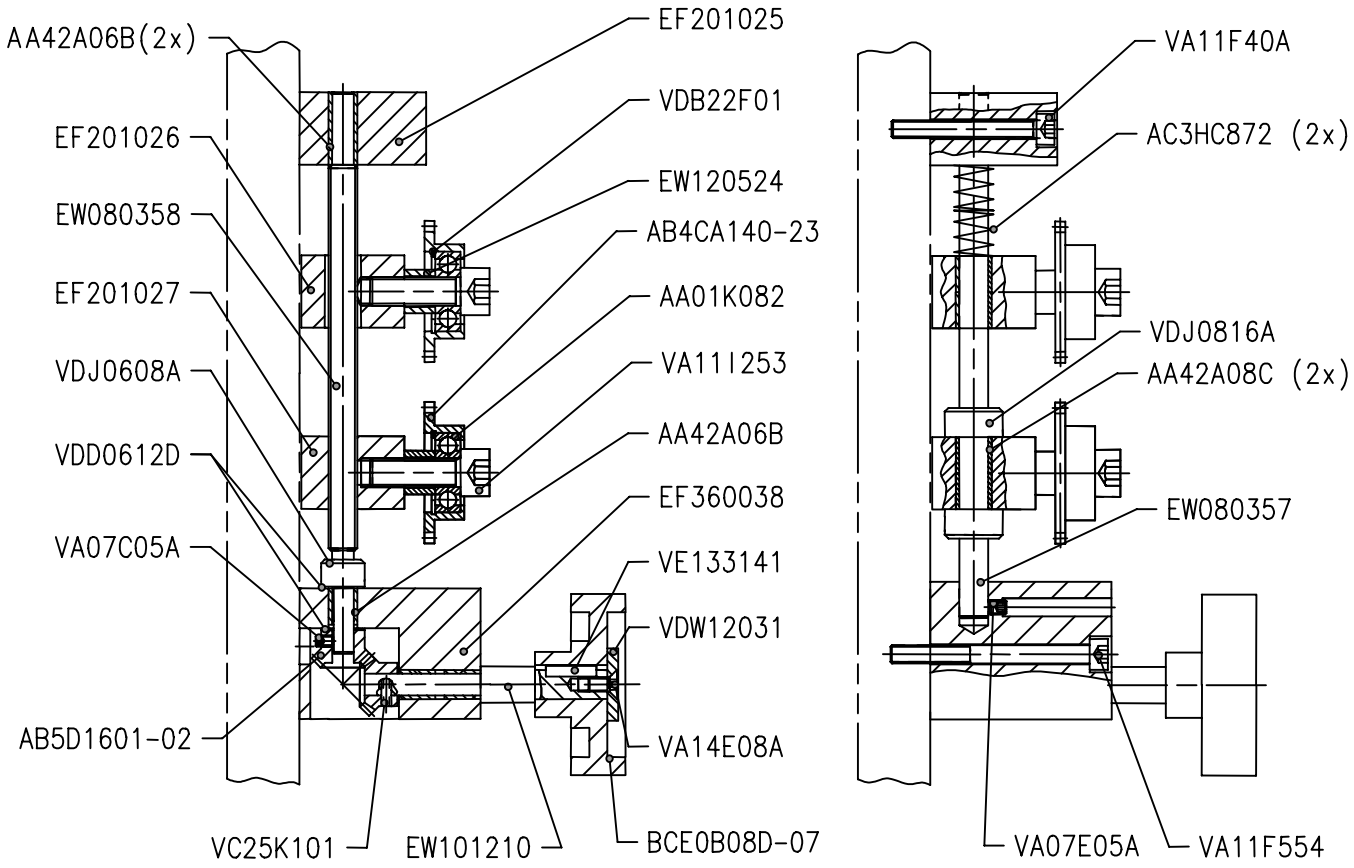
Order–No.	Designation
AA01K152	deep groove ball bearing
AB4CK150-02	chain wheel
AB5B2501-04	chain wheel
EV400188	pillow block
EW151031	shaft
EW200739	washer
VA10F05A	threaded pin
VA13F10A	flat head screw
VDA12F01	seeger ring
VDB32G01	seeger ring
VE133202	feather key

11.7.8 Bearing Axis (Pos. H; XLA0000500)



Order–No.	Designation
AA01K152	deep groove ball bearing
AB12E302-04	toothed belt wheel
AB5B2501-04	bevel wheel
EV400188	pillow block
EW151031	shaft
EW200739	washer
VA10F05A	threaded pin
VA13F10A	flat head screw
VDA12F01	seeger ring
VDB32G01	seeger ring
VE133202	feather key

11.7.9 Longitudinal Register (Pos. I; XURG001800)



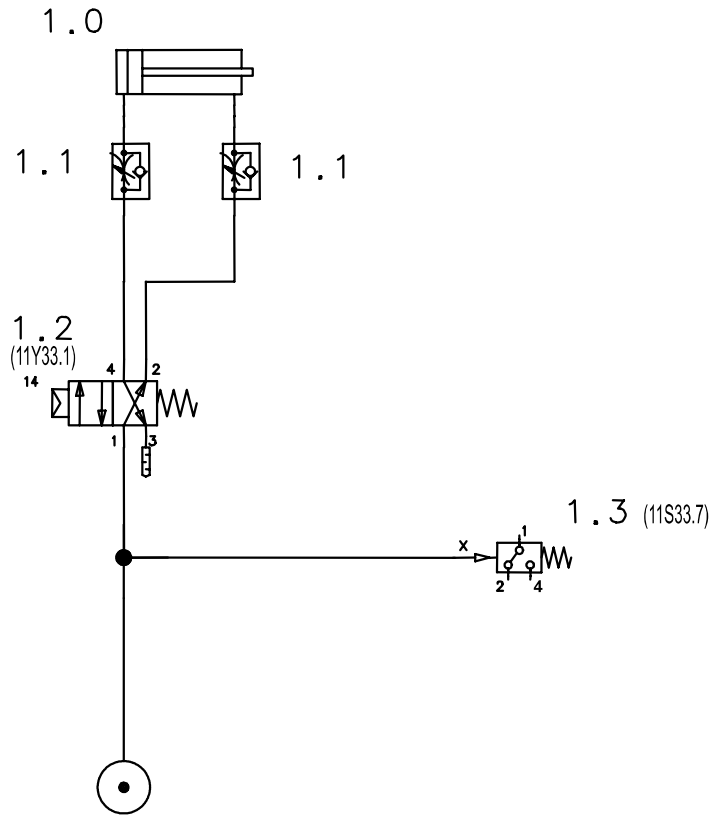
Umfangsregister XURG001800

Order–No.	Designation	Order–No.	Designation
AA01K082	deep groove ball bearing	VA07C05A	threaded pin
AA42A06B	slide bearing	VA07E05A	threaded pin
AA42A08C	slide bearing	VA11F40A	cylinder head screw
AB4CA140-23	chain wheel	VA11F554	cylinder head screw
AB5D1601-02	bevel wheel	VA11I253	cylinder head screw
AC3HC872	compression spring	VA14E08A	countersunk head screw
BCE0B08D-07	grip disk	VC25K101	sleeve
EF201025	holding block - above	VDB22F01	seeger ring
EF201026	guide block - above	VDD0612D	adjusting washer
EF201027	guide block - below	VDJ0608A	set collar
EF360038	holding block - below	VDJ0816A	set collar
EW080357	guiding	VDW12031	washer
EW080358	threaded spindle	VE133141	feather key
EW101210	register adjusting shaft	EW120524	bush

12 Pneumatic Plans

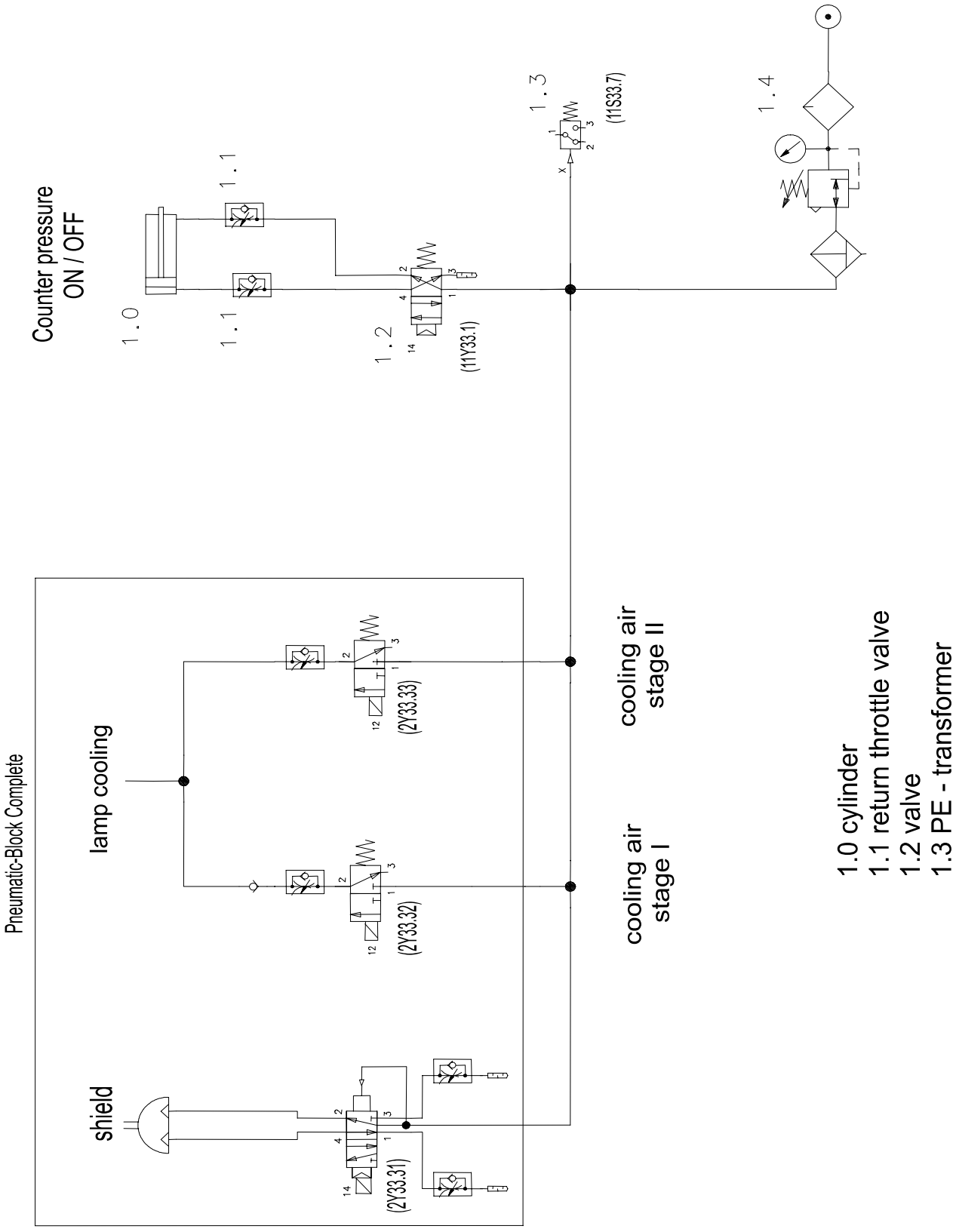
12.1 Pneumatic plan – vskPRINT 400 with dryer 2000 Watt

Counter pressure ON / OFF



1.0 cylinder
1.1 return throttle valve
1.2 valve
1.3 PE - transformer

12.2 Pneumatic Plan – vskPRINT 400 with dryer 3000 Watt



Pneumatic Block complete